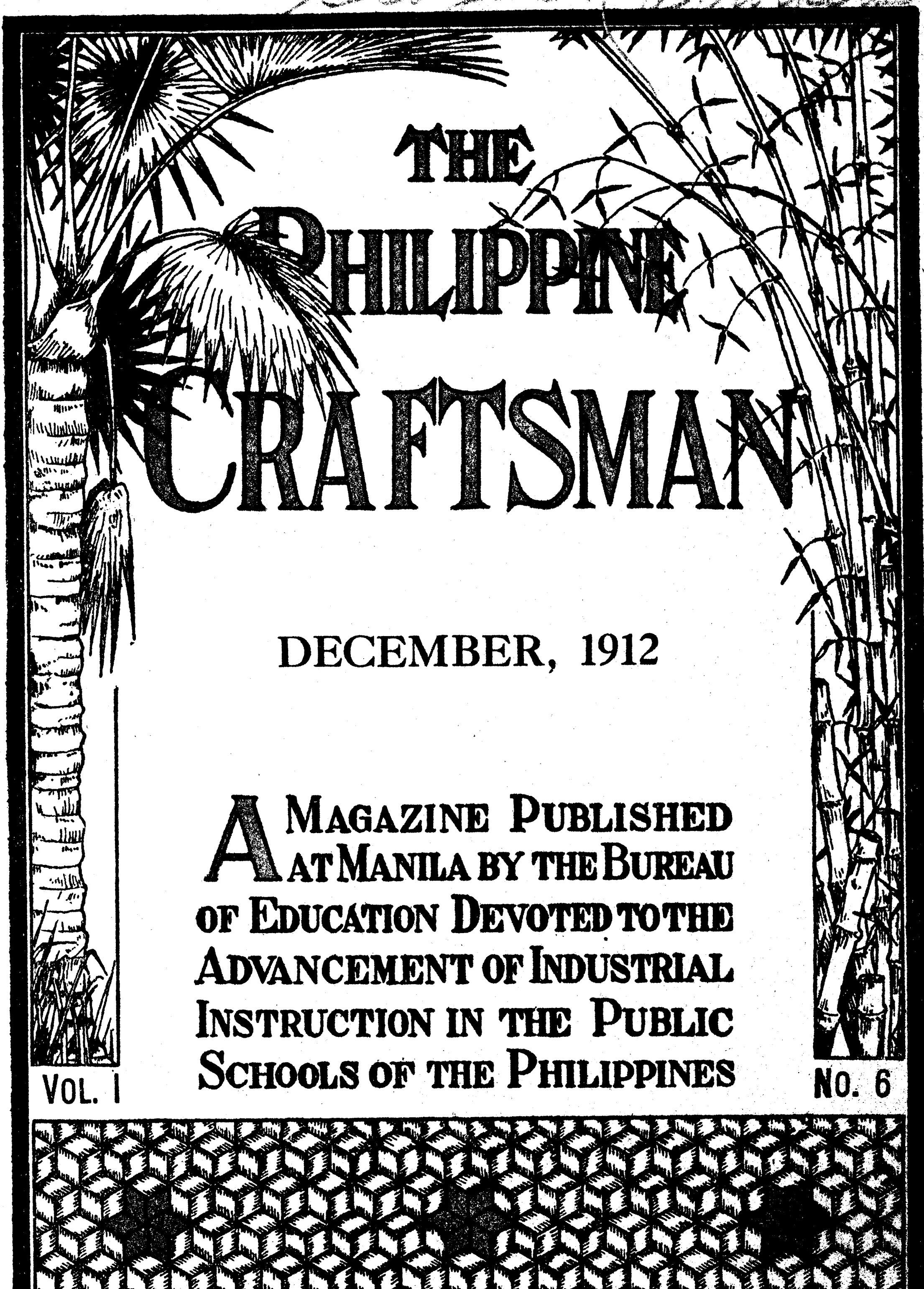
George E. Carrothers



THE PHILIPPINE CRAFTSMAN

DECEMBER, 1912

A MAGAZINE PUBLISHED AT MANILA BY THE BUREAU OF EDUCATION DEVOTED TO THE ADVANCEMENT OF INDUSTRIAL INSTRUCTION IN THE PUBLIC SCHOOLS OF THE PHILIPPINES

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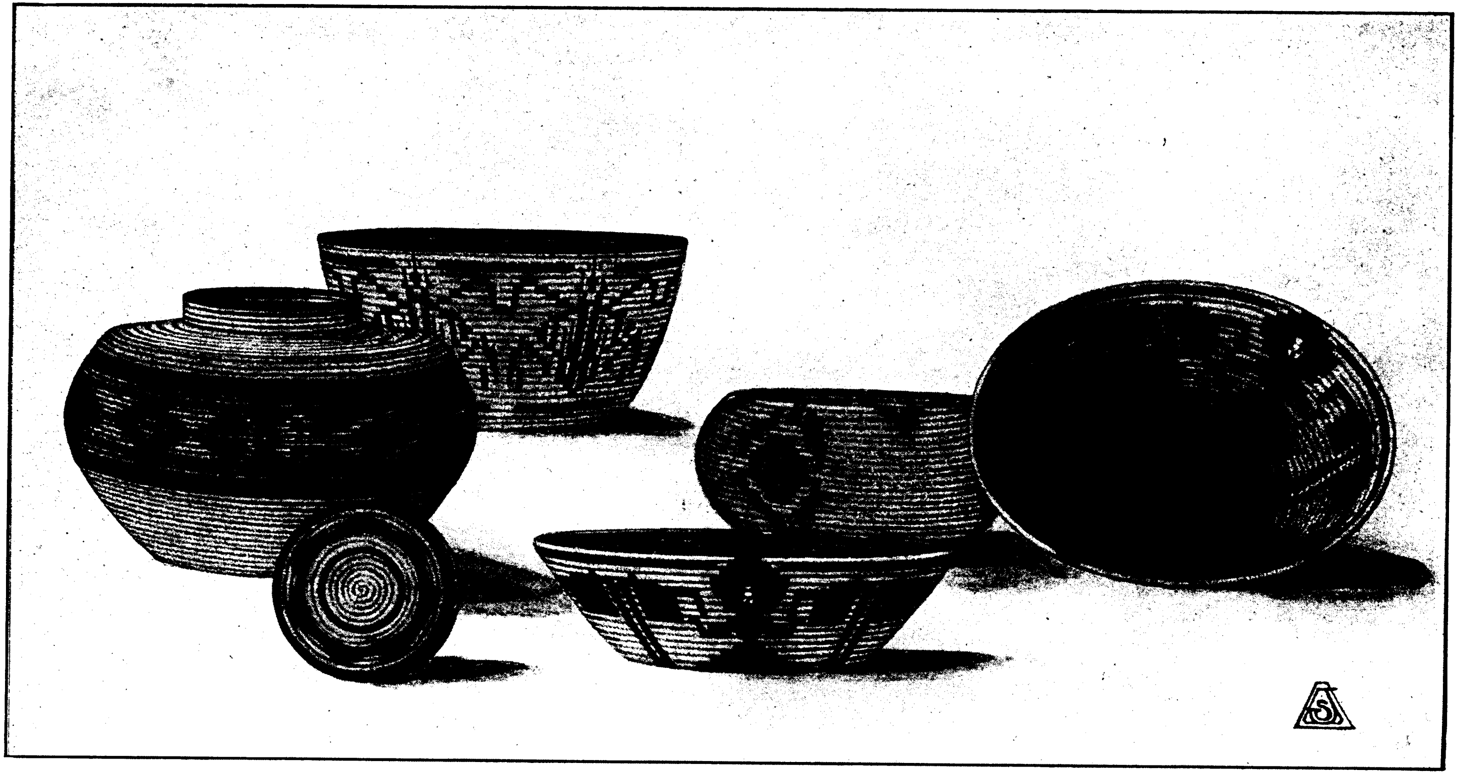

Fig. I. Fig. II. Fig. III*a*. Fig. IV. Fig. III*b*.

Abaca coiled baskets.

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The Philippine Craftsman

VOL. I MANILA, DECEMBER, 1912 No. 6

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TO WORK WITH THE HANDS WHEN THE HEAD AND THE HEART GIVE APPROBATION IS TO REALIZE IN THE FULLEST SENSE THE JOYS OF LABOR

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The Philippine Craftsman

VOL. 1 DECEMBER, 1912. No. 6

A STUDY OF DISTINCTIVE DESIGNS FOR INDUSTRIAL WORK IN THE PHILIPPINE PUBLIC SCHOOLS.

By SUSAN C. JOHNSON, General Office, Bureau of Education.

[Acknowledgment is due to Mr. J. M. Garvan of the Division of Ethnology, Bureau of Science, for the information given here upon the Mandayas, and also to Mr. J. C. Scott, Division Superintendent of Schools for Agusan, and Mr. W. Huse Chapman, Division Industrial Supervisor for Pampanga, for notes and drawings of designs found among the Manobos and the Negritos.]

INDUSTRIAL work no longer has to struggle to maintain a place in the public school curricula; it is a recognized factor in the present-day evolution in education. But that art has anything in common with industry is still a matter of conversion; that drawing is the universal language of industry and that design is a fundamental factor in construction are still to be learned.

It is due to a lack of appreciation of the value of applied design that the decoration of construction work owes its frequent failure of purpose; namely, to add beauty to the thing ornamented. A due respect for its intrinsic worth would prevent haphazard and accidental uses of ornament and would demand that it be used only with such thought and understanding as will produce results worthy of the time and labor expended. There is much more beauty in an undecorated article of good proportion and construction than in one which bears poorly applied or badly chosen ornament, when the so-called ornament ceases to be such. In art neither the good nor the bad is a personal matter. Taste is no more mere preference than judgment is mere opinion; it implies not only artistic feeling and critical power, but their cultivation also.

It is not necessary that every craftsman should be able to originate designs, but a knowledge of the principles of design and a familiarity with our great heritage of historic ornament is essential to his right judgment of art. With such knowledge and observation as a source of inspiration, he will be led to rational experiment, which, if he is fortunate enough to possess wholesome imagination, must produce worthy results. The true craftsman will not be content with mere imitation.

In considering applied designs for industrial work in the Philippines, the first purpose should be to have them always up to the highest standard, and the second to use designs which shall establish a style distinctive of the country.

A high artistic merit in our handicrafts cannot be reached at a bound, but will require much study, experience, and growth, and it may be that in the beginning, economic value will have to be sacrificed to the establishment of a good art value. But even so, let us not add to the already overabundance of very commonplace and unbeautiful objects which flood the market, the only excuse for which is that there is always some one who will purchase the article. If we are to compete with European thoroughness in our handicrafts we must ourselves be thorough. After a good design has once been secured, it takes no more time to execute it than to execute a poor one. A poor or ugly thing is not cheap at any price while "a thing of beauty is a joy forever" and will usually bring returns commensurate with the time and thought expended in securing it. The development of household industries, where the spare hours are turned to account, seems a positive solution of the problem of making worthy handicrafts pay.

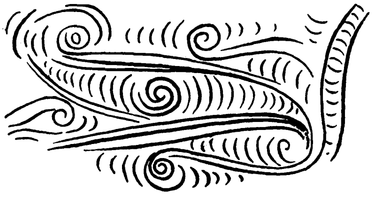


Plate I. Inverted volute.

Complexity in design is not a requisite of good ornament. On the contrary, a simple design, especially in craft work, is most often the best and most suitable one. Simplicity of design is a distinctive feature of pure Malayan art and is always preferable to excessive decoration. The tendency to overdecorate is often shown by the savage and his overcivilized brother. Barbaric ornament in its best and most characteristic form shows a single figure produced in a variety of sizes, proportions, positions, and colors. In his book on decorative design, Mr. P. N. Hasluck says: "The design of the natives of New Zealand perhaps is the most beautiful of all savage ornaments, and some of the best forms are founded upon the one idea of the inverted volute." The natives of the Friendly Islands and the North American Indians have also made many varieties of beautiful designs with a most simple and primitive unit, the zigzag, which also appears in great variety among the native designs in the Philippines as well as among those of other peoples of Malayan stock. The illustrations given here are from the arrows and combs of the Negritos. Various meanings are attributed to the different arrangements of the zigzag form, such as money, hills, water, or teeth, found in the designs of different localities.

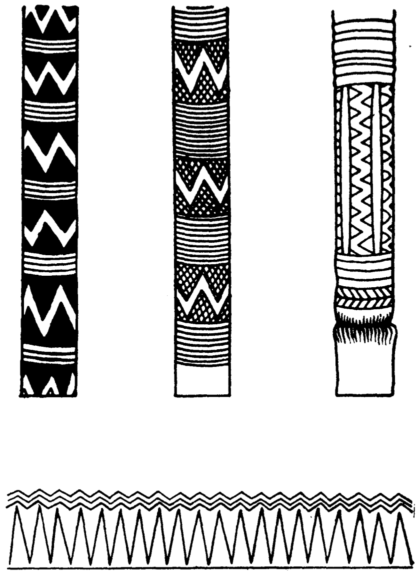


Plate II. Zigzag.

Malay design, especially where it shaws Indonesian influence, is often of a high order. A visit to the museum of the Philippine Bureau of Science will prove that the field upon which we may draw for designs of pure native origin is by no means a poor or meagre one. The decoration upon the clothing, weapons, and utensils of the wild tribes offers much that is worthy of observation and well suited to application in our industrial work. However, it must be remembered that these designs belong to the broad field of Malayan art and are not peculiar to the Philippines.

Identical units are found among the non-Christians in the most widely separated parts of the Islands, and in style there is a marked similarity to that of other primitive Malayan peoples.

There are two procedures by which distinctive designs may be secured: entire designs may be borrowed from the decorations found among the natives, or they may be constructed of units and motifs taken either from native designs or from natural forms found in the Philippines.

By the former, that of appropriating complete designs, the work will be one of the preservation of old designs rather than the establishment of new ones, and will contribute to the preservation of primitive Malayan art in its original form. This in itself is quite worth while and is the easier way, as little skill in executing design is needed; nevertheless, it will require knowledge and judgment to select the good and to choose that which may be best used for a particular purpose. For example, a bold design suited to wood or metal might not be at all suitable to embroider upon fine cloth; while a delicate design, beautiful in embroidery or lace, would lose value if applied to a less flexible medium or where the technical processes of construction are entirely different. However, textile design is adaptable to all fabrics, as well as baskets.

The selection of designs of Malayan origin may be a puzzling question. Malayan art shows so many Indonesian and Indo-European influences that its distinctions will not be clear to the casual observer. Even though these distinctions are left to the student of art, there will be no excuse for applying those designs which are plainly of foreign origin. This must also be observed in conventionalizing natural forms, so that we may not be influenced too evidently by some design which belongs plainly to foreign art.

Designs constructed with motifs from Philippine environment will be representative only in so far as the style of the design is distinctive, and as the motifs used become established and recognized, by constant repetition in a variety of designs and applications, as those which belong to Philippine applied art. The borrowed design will sink into the background of Malayan art, so that design with a motif from Philippine environment will generally be from the flora and fauna and the still life of this section of the world, and not that which is unique to the Philippine Islands. Just as the chrysanthemum or iris suggests Japanese fabrication, even though these flowers are common in other countries of parallel latitudes, the ilang-ilang, camia, or other flowers common to the Philippines may become significant of Philippine art.

These two distinct sources will produce styles quite different from each other. It is hardly probable that any modern mind will originate motifs or construct designs primitive in character. However, such designs would have the merit of being individual and a plethora of them would eliminate the necessity of copying illustrations or specimens from other countries. Since prehistoric times different peoples have produced ornament distinctive in style; thus to-day the craft work of the different countries bears the stamp of their own individualities. But we must be careful, in seeking for the uncommon and unique, that we do not lose sight of the beautiful, and that the freakish or startling does not mislead us.

Flowers and other natural objects, in their natural forms, should not be used as ornaments, but rather the conventional representations founded upon them. True art consists in idealizing, not in copying the forms of nature. This is not easy, for it is considered that to originate conventional designs from nature requires the highest skill of the designer. However, it is worth striving for; the history of ornament shows that nations which have had the highest artistic development have used in their crafts idealized natural forms rather than inflexible copies of nature. It is noticeable that many primitive peoples excel in this form of art. One authority states that every primitive design has been copied from some natural form, all trace of whose original may have been lost, only a pleasing geometrical form remaining.

The above method will prove the best way of securing original designs for our modern style of white needlework. The designs from the non-Christian tribes have been planned for bolder work and call for the use of color to make them effective, while those of late origin found among the Christian people are generally debased by poor drawing and composition. Among the old designs which show Spanish influence, there is much that is so beautiful in effect as to make it deplorable that this style should be lost because it no longer pays to follow it. Here again the fostering of household industries would make it possible to put such work on a profitable basis.

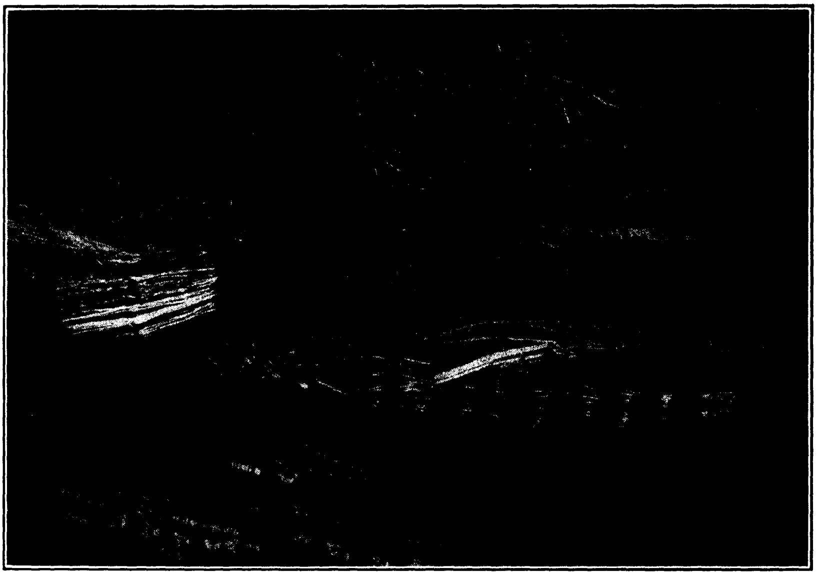


Plate III. Abaca fiber showing tie-and-dye process.

To excerpt units from designs found among the wild tribes and to construct new designs with them is probably the only method discussed which may give us a unique style of design. The use of the primitive unit will tend to balance modern ideas

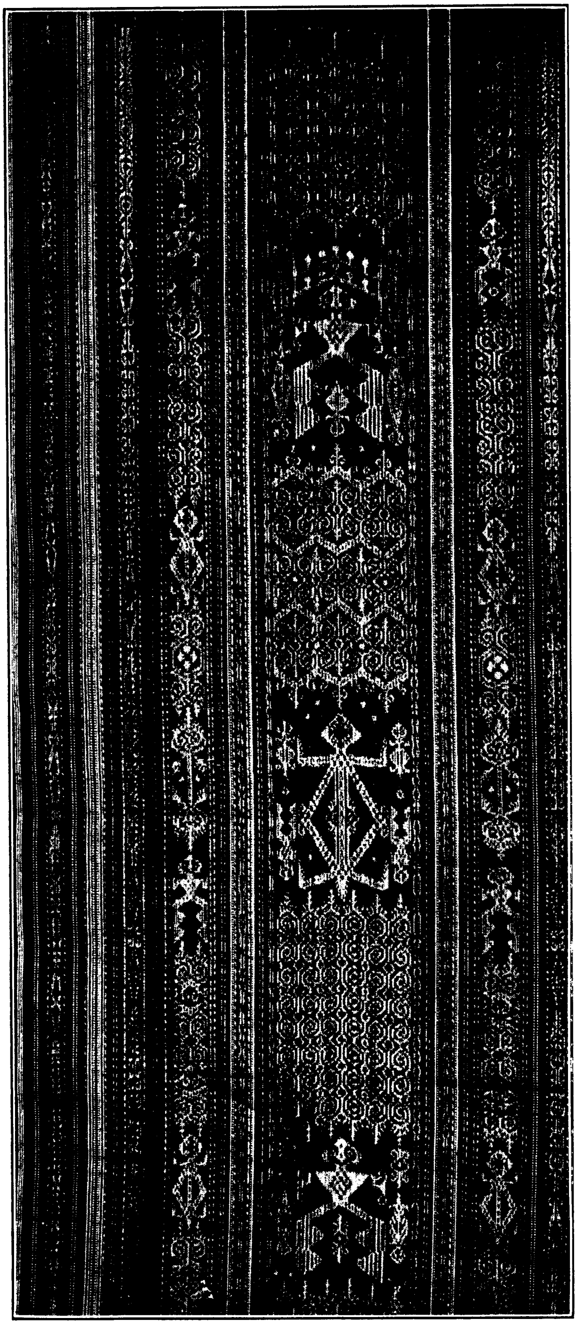


Photo by C. H. Storms.

Plate IV. A Mandayan skirt cloth.

of construction and so lift the resulting design out of Malayan art without having it sink into oblivion among modern designs. To bring worthy results the designer must draw upon the anthropology of the people. A knowledge of their myths, superstitions, habits and customs will help him to interpret the spirit of their art. Without full and rational use of their units the results will be mechanical and superficial. Although the securing of designs in this way will call for less technical skill than originating them, it will demand an understanding of the origin and culture of those tribes from whom the units are borrowed.

The illustrations here given are all examples of designs constructed from borrowed units, except the conventionalized kilog design for bags and the design for the nito basket. (See Plate XIII.) The latter is a complete design from the Dyaks of North Borneo. The Mandayan skirt cloth has furnished the motifs for the larger number of these designs without exhausting its possibilities, so prolific a source of suggestion is this one specimen of barbaric ornament. The units are transmitted truly with only such changes as were necessary to comply with the technical requirements of the article in hand; so far the resulting design is a fixed one, only the arrangement, spacing, and other details were left to the judgment of the designer, with but little demand upon the imagination.

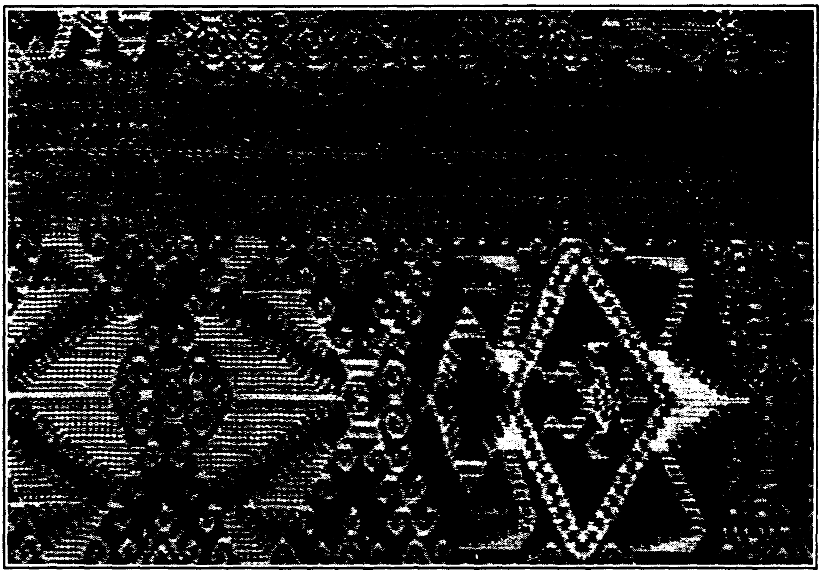


Photo by C. H. Storms.

Plate V. Detail of Mandayan skirt cloth.

The Mandayas, who make most of the cloth, live in the mountains of the southeastern part of Mindanao, east of the headwaters of the Agusan River. These non-Christians include approximately 20,000 people, about half of whom make the cloth, principally for their own use. Their physical appearance would indicate that they are of a different origin than that of the other non-Christian tribes of the Philippines. They are the fairest people in Mindanao; the men are tall, and the Caucasian type is frequent among them. Their suspicions of the magic power of white people make acquaintance with them difficult, but after their friendship has been gained they are of a frank, open and kindly disposition.

Statements made by themselves to the missionaries, as well as the notes of several historians, would seem to establish the theory that they are of non-Malayan origin, and facts to prove Dutch, Japanese and Indonesian influences are cited by different historians. This theory, however, is ignored by Blumentritt, and Doctor Barrows states that he thinks it rests upon very slim evidence. Father Pastells suggests that they owe their superior refinement to a strain of better blood. In further support of this theory, Kimblanga, a town on the east coast of Mindanao and close to the Mandayas, owes its origin to Europeans who were shipwrecked on Point Bagoso and settled there. A native trader also tells a story of a mechanical instrument, probably a clock or compass, which is preserved among the people of the interior. This, however, is not substantiated.

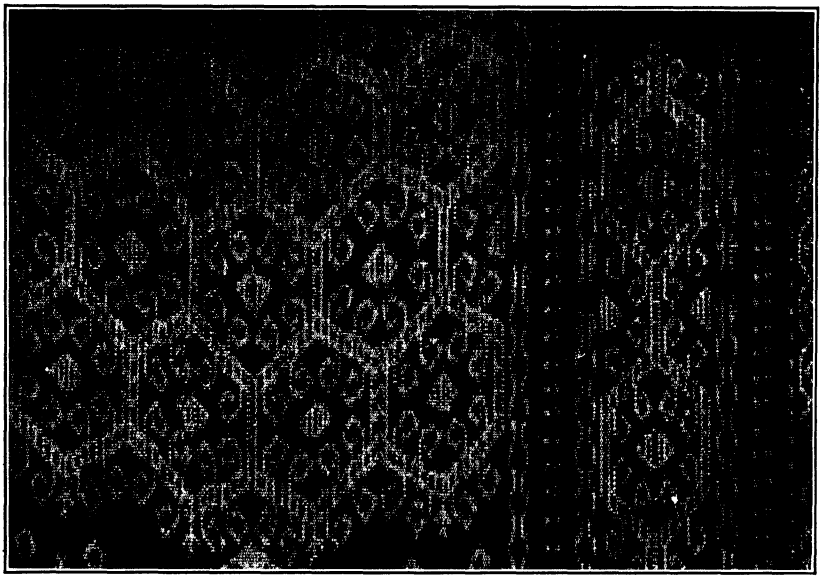


Photo by C. H. Storms.

Plate VI. Detail of a Mandayan skirt cloth.

The first white man to live among the Mandayas in recent times was Mr. J. M. Garvan, of the Division of Ethnology, Bureau of Science, who spent some time there in 1910 and 1911. In order to see anything of their way of living, it was necessary for him to disguise the fact that he was an American and to further allay their suspicions by taking to pieces his watch and compass to show that no demon was present. But, having arrived among them during the progress of a protracted religious movement, he found it difficult at that time to obtain any great amount of information in regard to their customs.

Owing to the dearth of historical facts about the Mandayas it is difficult to do more than conjecture as to the identity of the units used in their applied designs. Two of these conventionalized forms, it will be seen, are plainly a crocodile and a woman wearing an exaggerated comb, while the other two are probably a frog and a shell fish, or possibly a turtle; but we have no proof as to what significance they have, if any.

As simple geometrical units such as these are applied universally in design from savage to modern art, they also give little that is definite as to their origin or significance. It is of interest to note, however, the marked similarity between the geometrical forms and color in this cloth and in that of the Dyaks of northwestern Borneo.

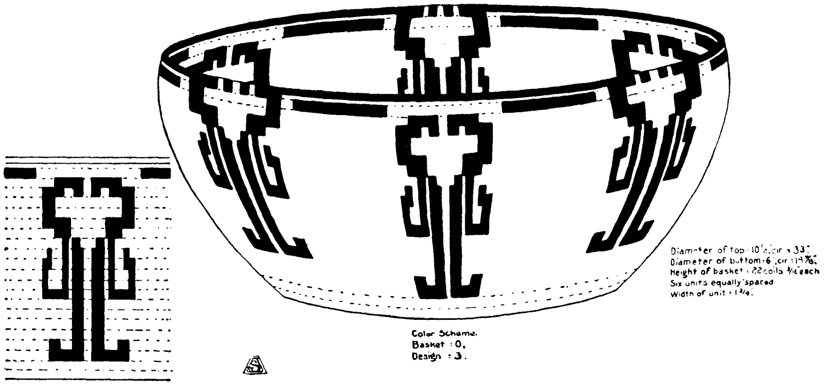

Diameter of top 10½, cir = 33"
Diameter of bottom 6", cir = 18⅞"
Height of basket : 22 coils 1/16 each
Six units equally spaced
Width of unit = 1¾.
Color Scheme.
Basket : 0.
Design : 3.

Plate VII. Coiled abaca basket design.

The representation of the crocodile may be due to a superstition that they must placate the evil spirits, or those of which they are afraid, by giving them prominence. However, to speak the word crocodile or the name of any other creature not found in their environment, is prohibited. Other superstitions prohibit speaking the word salt or fish during the process of cloth making; uncovering the knee; using wood which is not clean; allowing the fire to smoke; sitting on the hearth frame; allowing a man to touch the dyepot; touching the frame of the loom with a weapon; or wearing the necklace otherwise than crossed. It is believed that a violation of these will cause the goddess of the clouds to bring a storm upon them.

Mandayan cloth is made of abaca, which is native to that section of the country, and the fiber is prepared in the usual manner. The separate fibers are knotted into a continuous yarn sufficient for the entire warp, and the threads are taken care of in the meantime by being laid in a flat basket. Contrary to the most common way of modern weaving, the woof threads are of a single color, usually dark brown, while the colors and figures of the design are laid in the warp as it is stretched upon the loom. This is accomplished by a "saving" or "tie-and-dye" process which is common among other Malayan peoples, although the details vary in different places. In Java a coating of wax is used instead of the binding of the fiber.

The first step is to separate the yarn for the warp into bunches of from ten to sixteen threads each. These are then bound with fiber at intervals of several inches along their entire length, the bound portions covering spaces of from one-half to three-fourths inch. The bunches of yarn are now ready for dyeing, the natural color being "saved" under the bindings. The colors are dark red, brown or brown-black, and natural; vegetable dyes are used.

The red is the root of a shrub, for which the general Mandayan name is "sikalig," and the black is the root and bark from a mangrove known among the natives as either "kanaiyum" or "kanaum." The yarn is boiled with the root or bark until a fast color is secured and though the tones vary they are always soft and pleasing. The Mandayas are expert judges of good color and value the cloth accordingly. They dispose of the poorly dyed pieces to the native traders, keeping the best colors for their own use.

After the yarn is dyed the bindings are removed and the result shows a series of spots, the colored alternating with the natural.

The warp is now ready to be set upon the loom and the pattern is laid in by so selecting and placing the colored sections as to form the desired motifs of the design. The warp is then stretched and the weaving proceeds as with other primitive looms. This process of laying in the design is an intricate one, the details of which are probably now worked out according to a prescribed rule, but to originate that design required nothing short of genius. No two pieces are exactly alike. This is due to the use of different tones of the colors, the different relative positions of the colors, the different selection and placing of units and to the variations of weave which result from the individual notions and imaginations of the workers; but however varied, the result is good and the whole cloth particularly pleasing. The designs found in this and similar cloths seem particularly applicable to basketry.

The coiled basket as it is being developed in the Philippines is an expression of a type of basket which has existed for over six thousand years. Specimens of these have been found among many prehistoric peoples. "The handicraft," to quote from O. T. Mason, "never had more genuine lovers than at the present time." The most beautiful ones to-day are probably those found in Hindustan and among the older workers of the American Indians, where the purpose of the craftsman was to create something beautiful as well as useful, with little thought as to the amount of time and labor expended.

With this background so rich in the truly beautiful as a standard of comparison, we have no light task to make the coiled basket of the Philippines a distinctive production, falling short neither in its art nor in its economic value. We have much to encourage the undertaking, for whether made of abaca, buri raffia, nito, or rattan, the possibilities for both good construction and good ornamentation are large. The simple technical requirements admit of great latitude in the use of geometric forms, especially where the coil is small, and where the softness, luster, pliability and affinity of the fibers for dyes, as well as the beautiful soft tone in the natural color, add to these possibilities.

Aside from the sentiment surrounding the art of an aboriginal people who are fast disappearing, there is no apparent reason why the Philippine coiled basket should not reach an art value equal to the basketry of the North American Indians, and a commercial value commensurate with the time and labor expended.

The laws of line, form, area and color harmonies, which should guide inspiration in the construction of design, cannot be disposed of in a short space, but certain principles are illustrated in the following applications to basketry.

The first thought in any piece of construction should be for shape and relative proportions; when these are so good as to make the piece pleasing without decoration, a design may be chosen which will harmonize with and be a part of the whole. The decoration should grow up with the structure. The aim should be to decorate that which has been well constructed, rather than to superimpose ornament upon construction, thus leaving the feeling that the ornamentation has been accidentally placed and is merely resting upon the surface in a detached

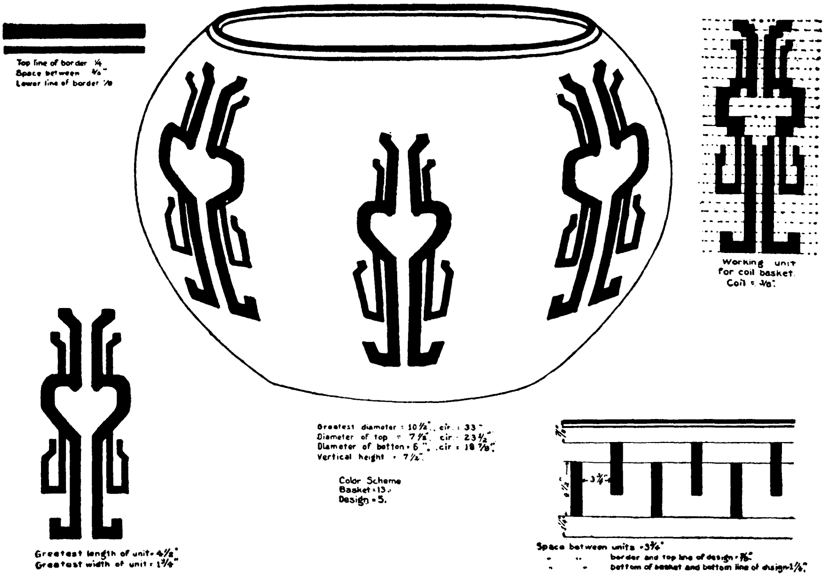
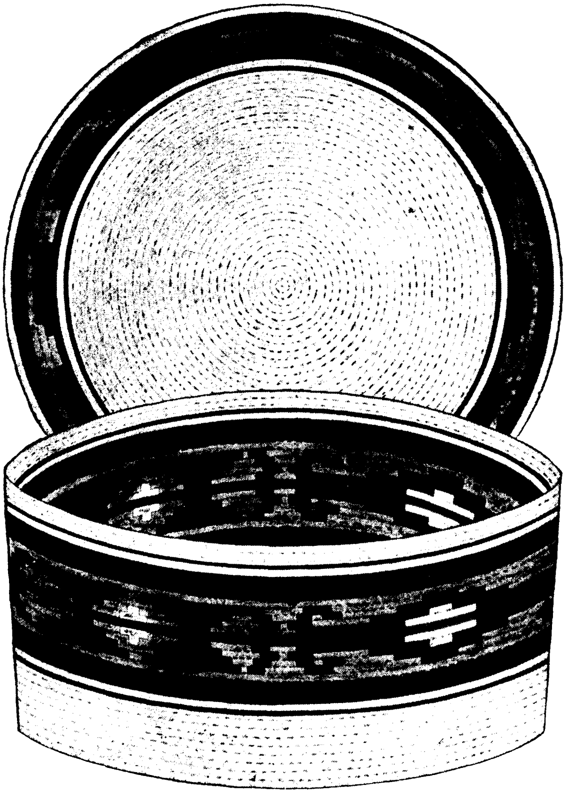

Top line of border 1/4
Space between 1/8"
Lower line of border 1/8
Working unit
for coil basket.
Coil = 1/8".
Greatest diameter = 10 1/2"., cir. = 33"
Diameter of top = 7 1/2". cir. = 23 1/2"
Diameter of botton = 6"., cir = 18 7/8".
Vertical height = 7 1/2".
Color Scheme
Basket = 13.
Design = 5.
7/8"
3 3/4"
2 1/2"
1 1/2"
Space between units = 3 3/4"
" " border and top line of design = 7/8"
" " bottom of basket and bottom line of design 1 1/2".
Greatest length of unit = 4 1/2"
Greatest width of unit = 1 3/4"

Plate VIII. Coiled abaca basket design.



COLOR SCHEME.

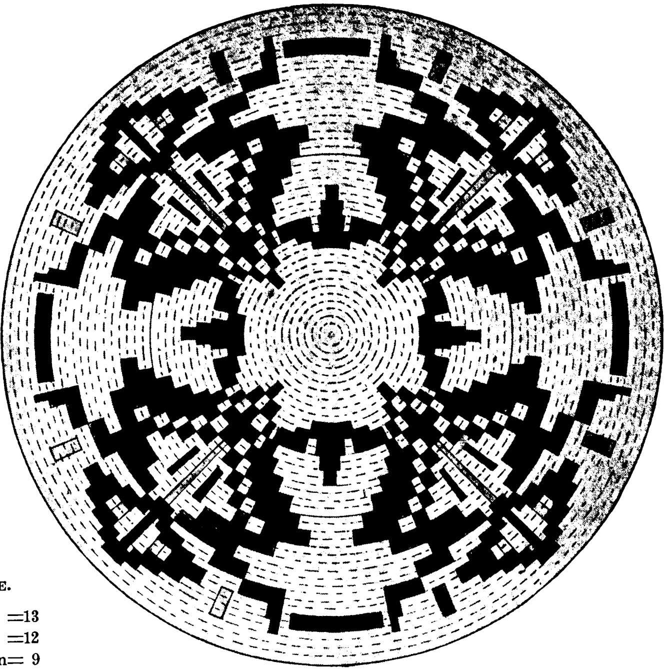
Basket	=3
White in design	=3
Heavily shaded design	=4
Slightly shaded design	=6
Black design	=0

Diameter of basket at top, 9⅝ inches; circumference, 30 inches.

Diameter of basket at bottom, 9 inches; circumference, 29 inches.

Height of basket, 31 coils, ⅛ inch each.

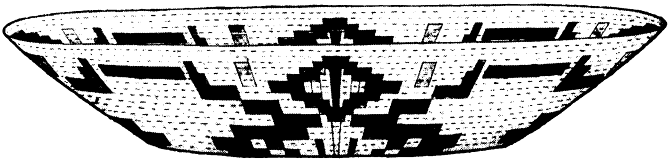
Plate IX. Coiled abaca basket design.



COLOR SCHEME.

Basket =13
White in design =12
Shaded in design= 9

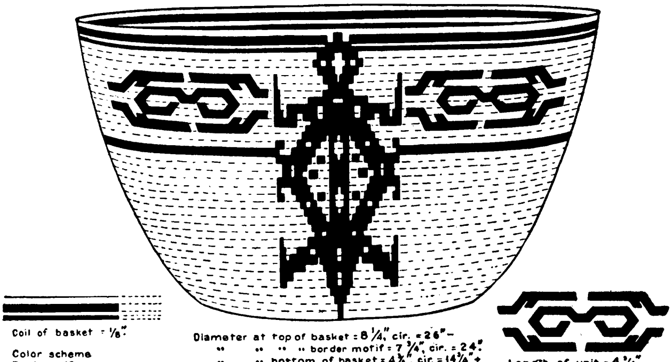
Plane of basket.



Diameter of basket at top, 10½ inches; diameter of basket at bottom, 5¾ inches; height of basket, 1⅝ inches.

NOTE.—This may be worked in lupis weave with coils as shown or in a coiled basket with ¼-inch coils.

Plate X. Coiled abaca basket design.



Coil of basket = ⅛".

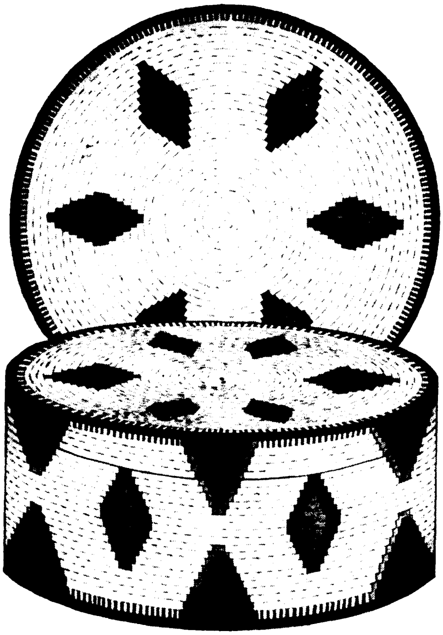
Color scheme
Basket = 13.
Black in design = 12.
White spots in crocodile unit = 11.
White within crocodile unit = 11.
Black spots in crocodile unit = 1.

Diameter at top of basket = 8 ¼", cir. = 26"—
" " " " border motif = 7 ¾", cir. = 24".
" " bottom of basket = 4¾", cir. = 14¾" +
Vertical height of basket = 4⅜".

Length of unit = 4 ¾".

Width of crocodile unit = 2 ⅛".
3 crocodile units and 3 geometrical units equally spaced.

Plate XI. Coiled abaca basket design.



COLOR SCHEME I.

Black =Red.
Shaded=Dark brown.
White =Light natural.

COLOR SCHEME II.

Black =Dark brown.
Shaded=Light brown.
White =Light natural.

Working unit full size.

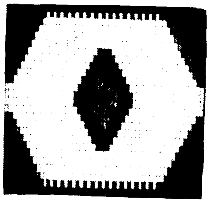


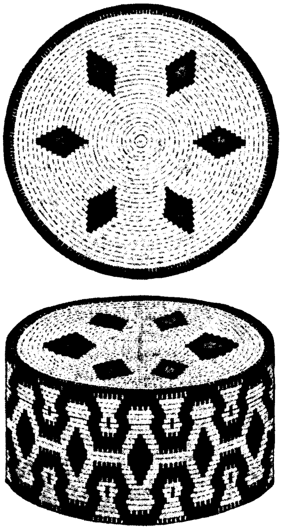
Plate XII. Coiled nito basket design.

COLOR SCHEME I.

Black =Dark brown.
Shaded=Red.
White =Light natural.

COLOR SCHEME II.

Black =Light natural.
White =Light brown.
Shaded=Dark.



Full size of basket.

Working unit.

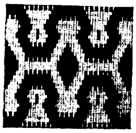


Plate XIII. Coiled nito basket design.

way. This principle of design depends as much upon the placing of the decoration as upon the choice of design.

The following rules illustrated in basketry will serve to guide in applying the above principle:

(1) The heavier part of the design should be placed upon the broader part of the basket.

(2) An upright form belongs to a basket which has in its shape a feeling of rising rather than of remaining flat.

(3) A basket which has greater width than height requires an arrangement of motifs which carry the eye around.

(4) A shallow, plate-like basket calls for a broad, flat unit if more than a border is applied. For illustration of the above, see Plates VII and VIII, which show the different uses of the same unit in accordance with rules 1 and 2; figure 4, frontispiece, for rule 1; Plate IX and figure 1, frontispiece, for rule 3; Plate X for rule 4. Note that in Plate XI the upward direction of the crocodile unit, suited to a taller basket, is counteracted by the horizontal placing of the geometrical units. In figure 2, frontispiece, this same upward tendency is balanced by the all-around feeling given by joining the motifs. In Plate X and figure 3, frontispiece, the greatest width and weight of color of the motifs are placed where the elevation of the side begins, this being the base of support for the lighter top section; the

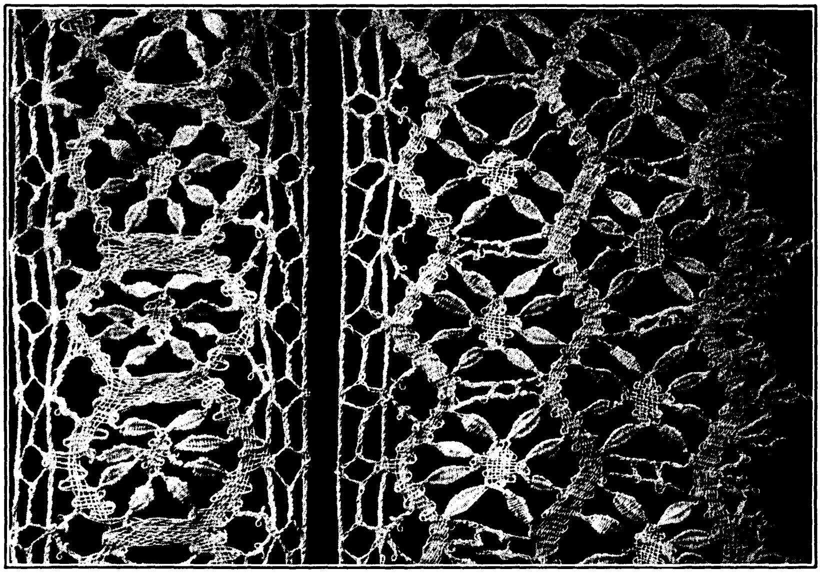


Plate XIV. Lace design from Mandayan cloth.

broken border helps to keep the feeling of lightness at the top, which a complete circle might have destroyed.

(5) All ornament should be based on geometrical construction. In pursuance of this, the surface to be decorated should be considered as being made up of certain geometric forms which in themselves conform to the general shape of the surface to be decorated. The leading lines of the design should follow the direction of this form. For example, in Plate X the plane of the basket is cut into four right-angled triangles, a geometric division of a circle which the leading lines of the unit follow. The decoration of these triangles demands the long rectangles which connect the large units, in order to prevent an incomplete feeling in the wide side of the triangle opposite

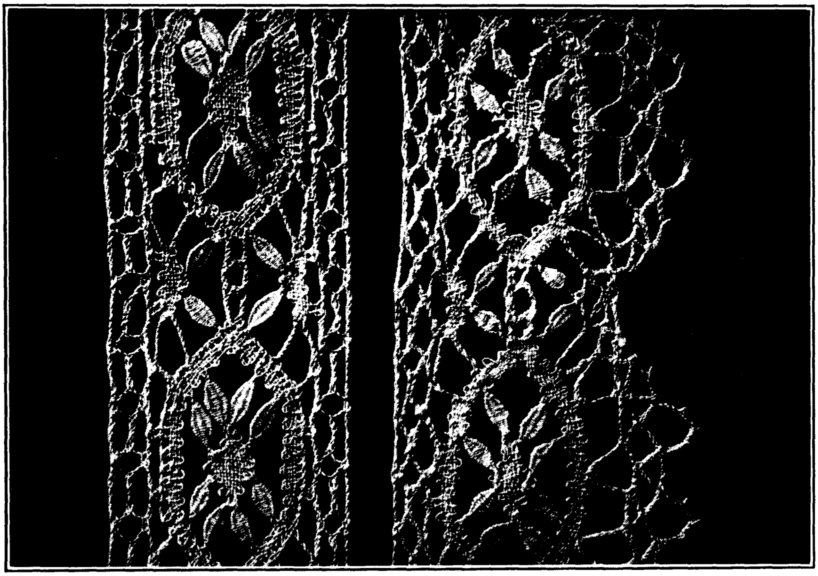


Plate XV. Lace design from Mandayan cloth.

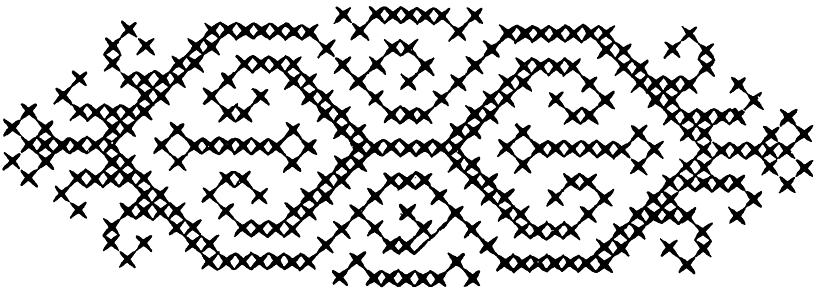


Plate XVI. Cross-stitch design from Mandayan cloth.

the right angle and also to connect the separate motifs, thus giving unity to the whole. In Plate VII the surface of the basket is cut into rectangular spaces and the narrowing of the unit at top and bottom conforms to the narrowing of the rectangles in giving the spherical shape to the basket.

(6) Those proportions will be most beautiful which will be most difficult for the eye to detect. Example: a rectangle in which the short sides are contained equally in the long ones (2 by 4 or 2 by 6) is uninteresting, as the eye estimates the relation easily and the attention is not held, as it would be in a more subtle proportion. This holds good in the proportions within a single form and also in its relative proportion to other forms, and is especially applicable to the lines and spaces of

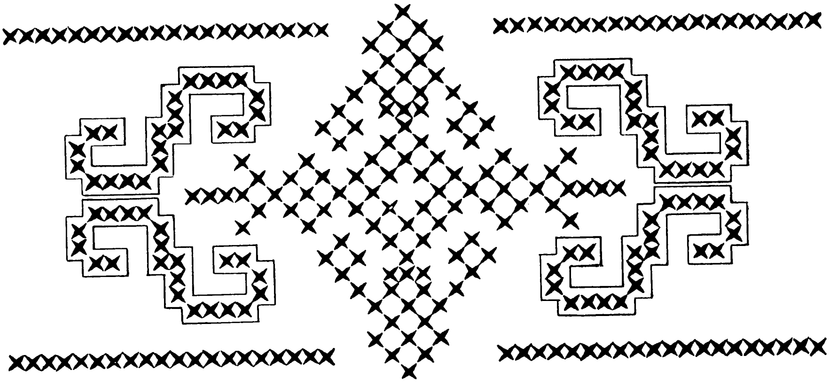


Plate XVII. Cross-stitch design from Mandayan cloth.

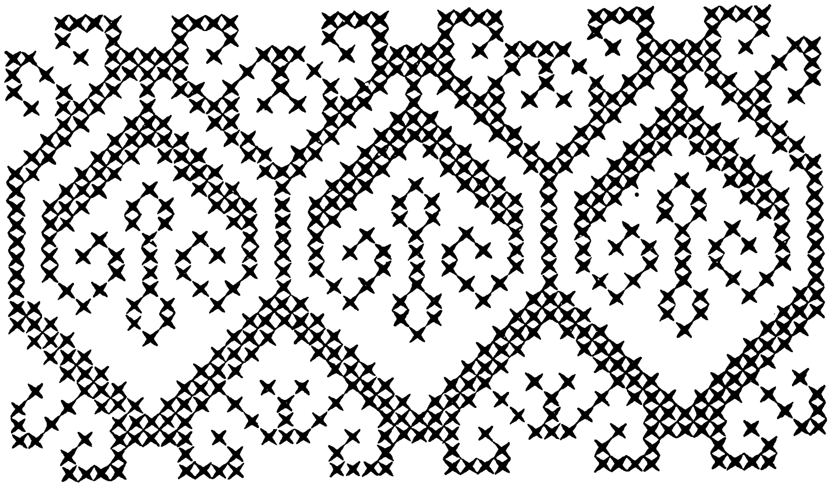


Plate XVIII. Cross-stitch design from Mandayan cloth.

borders. In order to avoid monotonous spacing it may be necessary at times to split a coil. (See Plate XI and figure 2, frontispiece.)

(7) There must be a unity in the whole design which grows more difficult to secure as the variety of units is increased. The orderly recurrence of the same geometric shape adds to the enjoyment of the whole. Where different units are used in the same design, their relative proportions should be such that there is one major, predominating unit to which the others are subordinate, and never two of equal value.

(8) As much thought must be given to the spaces of the background as to the motifs themselves. This is a third reason for the use of the broken border of rectangles in Plate X, without which the space between the units would appear to run out and over the edge, thus destroying a feeling of repose. In addition, the space so broken is a more interesting one, as the planes are of greater complexity. A comparatively simple way of breaking up the background into pleasing spaces is to echo the space itself. (See Plate XXIII.)

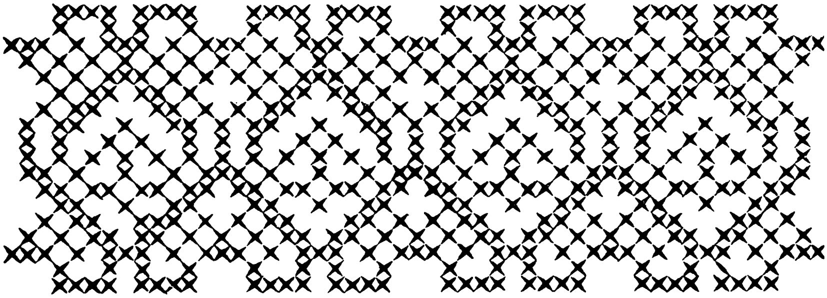


Plate XIX. Cross-stitch design from Mandayan cloth.

In design, the juxtaposition, harmony, and relative quantities of color are of equally great value with form; but that is a study of itself and only one important law as to its effect upon form will be given here; namely, a dark background serves to unite the units of the design, while a light background causes them to stand apart. This must be considered when spacing units. For example, if the colors in Plate VII were reversed (a light unit upon a dark ground) fewer units might give a better effect, the space between not appearing so large. But with the light ground, fewer units would probably leave a feeling of barrenness.

Good designs have rhythm, balance, and harmony; they are sane, regular, orderly, and consistent throughout. But this

Plate XXI. Kinauilan design.

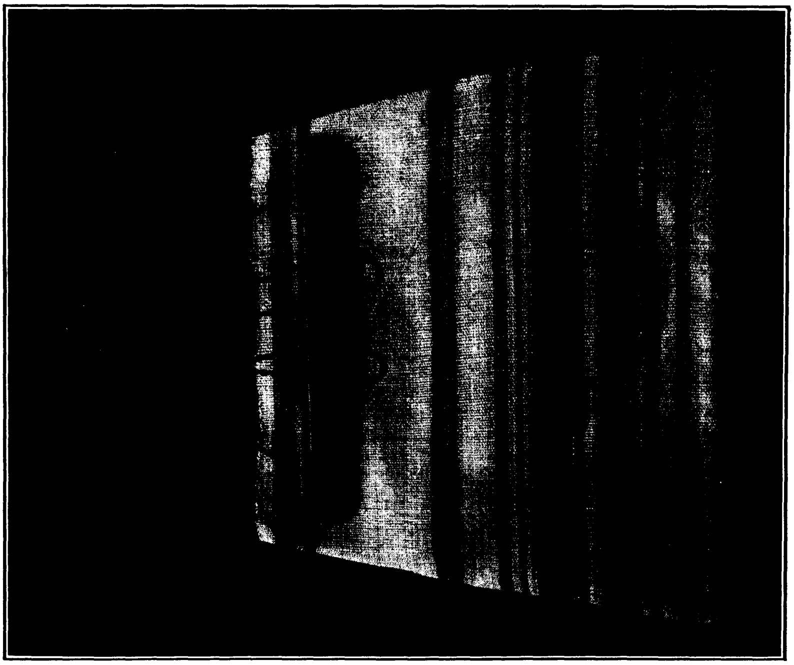


Plate XX. Stripes common to barbaric design.

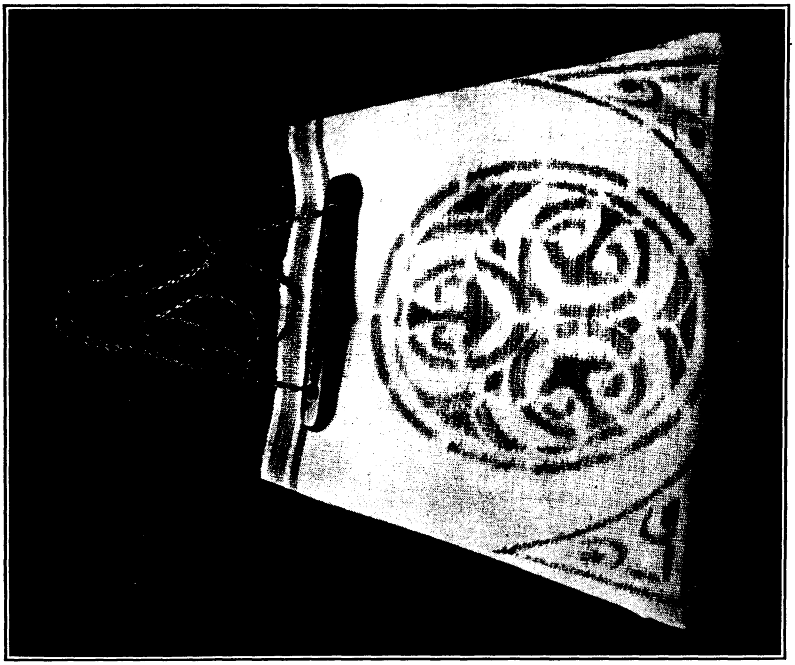


Plate XXIII. Kilog design.

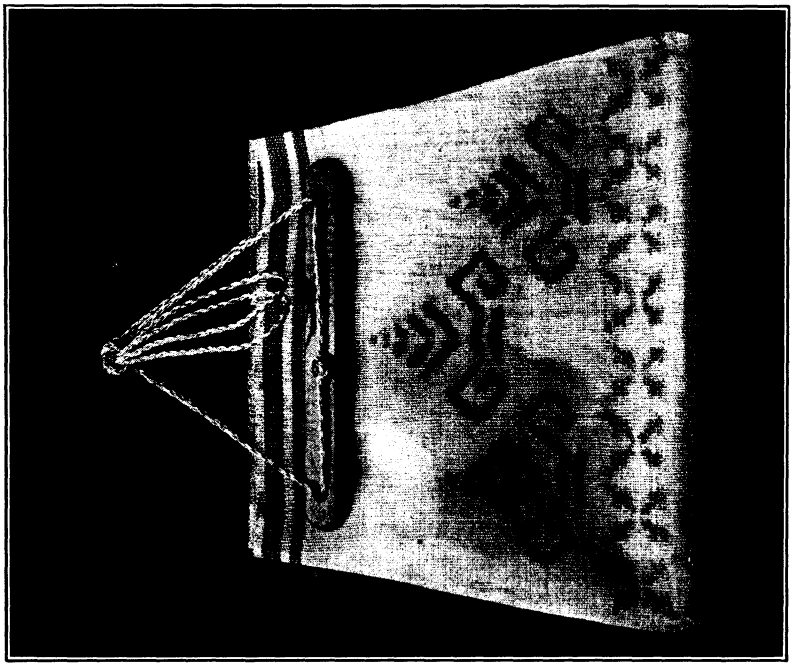


Plate XXII. Kinorus or Quinorus and Tinamposo design.

result cannot be secured merely by slavish application of the laws referred to above.

To quote from Ruskin: "The man who has eye and intellect will invent beautiful proportions and cannot help it. There are one or two general laws that can be told. They are of no use indeed, except as preventatives of gross mistakes."

It must be remembered then that not rules alone, but also observation, knowledge, and experience, combined with a cultivated taste, sound judgment, and a light fancy, will be needed for good designs.

The designs used on the handbags are from those frequently found on the clothing and in the tattoos of the Manobos in Mindanao.

Kinauilan (Plate XXI) means made like a hook; tinamposo (Plate XXII) is the particular form of tamposo meaning heart-shaped; and kinorus or quinorus (Plate XXII) are from korus, meaning made like a cross. Such associations as these add to the interest of a design, as it then appeals to the mind as well as to the eye.

Kilog is a fern (*gleichenia linearis*) found in several localities in the Philippines. The anchor-like unit inclosed in a circle is a drawing of a cross section of the stem. The circular form of the natural unit suggests the circular form for the complete motif; the spaces which occur are echoed with similar forms, both within the circle of the motif and again at the corners of the bag, to fill the rectangular space of the bag itself. The lines and bar at the top again carry out the rectangular shape and through this simple process the resulting design is evolved.

The bags are woven of abaca fiber, the design being stenciled on the warp before the woof is filled in. This gives the soft outline which would not be the result if the stenciling were done on the cloth after weaving. The whole process is a simple one, requiring only patience and precision. As a utility bag it has the advantage of being very strong and light. The clasps are of camagon, narra, or lanete, according to the demands of the color scheme.

All of the designs presented in black and white lose value through the absence of color, which is an important quality of beauty. However, the frontispiece will serve to illustrate that the use of low tones is desirable.

This article attempts to set forth only a few of the ideas relative to securing worthy and distinctive designs for our craft work. Others will follow with the hope that they may prove helpful to those who are carrying on the work.

METHODS OF IDENTIFICATION OF PHILIPPINE WOODS.

By E. E. SCHNEIDER, Wood Expert, Bureau of Forestry.

ONE of the greatest difficulties encountered by both producers and consumers of lumber in the Philippines is that of recognizing the immense number of timber species they have to handle. The difference in external appearance between two species is often very slight and besides this, every individual species may vary widely in those qualities which are most readily perceived—color, weight, and hardness. Moreover, enormous as is the number of tree species in the Philippines, their names are still more numerous. Barring a few widely distributed and very well-known species (such as Ipil, for instance), it is the exception rather than the rule to find the same name for a given tree in two adjacent provinces. Now it evidently avails the woodworker little to know that a given wood possesses certain mechanical properties or a certain degree of durability if, on the one hand, he is not sure of recognizing the wood when he finds it with its proper commercial and official name, or if, on the other hand, it occurs in his vicinity with a radically different name.

In this paper an attempt has been made to give the reader an idea of how to begin to recognize woods. A systematic key and descriptions of all known Philippine timbers would go far beyond the limits of such an article as this, besides including scores of species which are of little or no special interest to the average woodworker.[1]

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[1] The only key published so far is in "Philippine Woods," by F. W. Foxworthy, Philippine Journal of Science, Vol. II, Sec. C. No. 5. This work, which contains descriptions and photographs of the cross-sections of some sixty woods, is an excellent guide for the beginner. (In several cases it will be found that woods are described in this work as of considerably lighter color than in the present article; much of Doctor Foxworthy's material was from small, immature trees.)

Other works to which the reader is referred for further information about Philippine woods are: "Indo-Malayan Woods," same author, Philippine Journal of Science, Vol. IV, Sec. C, No. 4. (108 figures, of which about 90 are of Philippine woods; the plates accompanying the present article are from this work, lent by courtesy of the Bureau of Science); "The Forests of the Philippines," by Dr. H. N. Whitford, Bulletin No. 10, Bureau of Forestry; and "Uses of Philippine Woods," Bulletin No. 11, Bureau of Forestry.

METHODS OF IDENTIFICATION.

In the first place, it must be understood that the only positive way of identifying most woods is by the study of the structure as seen in a clean, smooth cross-section. The necessary equipment consists of a sharp pocketknife and a lens magnifying four to five diameters. The following elements, their relative abundance and their arrangement, are to be observed:

1. *Hard and soft tissue.*—The hard tissue constitutes, so to speak, the background of the picture in most woods. It is generally more abundant than any other element, and as a rule is darker and smoother-looking than the soft tissue. The latter, besides being lighter in color, has a spongy appearance. It very commonly forms either round or oval rings or else, irregular patches surrounding the pores. (See figs. 4, 6, 20.) Frequently these patches run together, forming more or less regular patterns of either continuous and parallel, or else broken, wavy, branching or diagonal, lines. In some woods the soft tissue takes the shape of regular patterns that are not related to the position of the pores. As a rule, very dense, hard woods contain little, and very soft woods, a great deal of soft tissue.

2. *Growth-rings.*[2]—These are concentric belts formed by the addition of material to the outside of the trunk during the growth of the tree. Sometimes they are quite regular and sharply distinguished, sometimes irregular or indistinct, while in many woods they are absent. (See figs. 8, 9, 11, 25.)

3. *Pithrays.*—These are bundles of wood fibers that run radially from pith to bark at right angles to the grain. In the cross-section they are visible to the naked eye in most woods. In longitudinal sections they are not generally conspicuous unless the section is exactly or very nearly radial. In such sections they form, in woods like Oak and Catmon, the "silver" or "flake" grain so familiar in quarter-sawn oak furniture. Their relative thickness, width, and frequency are important aids to identification. In probably a majority of all woods they are somewhat lighter in color than the hard tissue, in some darker, but only in very few exactly of the same color and shade as the remainder of the wood.

4. *Pores.*—The arrangement, shape, and relative size of the pores form the most conspicuous feature in the cross-section of most woods. In some species they are arranged in more or

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[2] This term is preferable to "seasonal rings" or "annual rings." Too little is known about the manner of growth of tropical woods to warrant the use of these more definite terms.

less distinct concentric rows following the growth-rings; such woods are called "ring-porous," and all others "diffuse-porous." The only ring-porous woods described in the following notes are Banaba, Batitinan, Calantas, Narra, and Teak. (See figs. 7, 9, 25, 35.) Among diffuse-porous woods, some have the pores arranged in straight or oblique radial rows, others in more or less wavy, often branching tangential lines (forming sometimes irregular "herringbone" or other patterns) and a great many, finally, have the pores scattered without any regular arrangement. The largest pores are about like large pinholes, while the smallest are barely visible under a pocket lens.[3] In many woods the pores are almost uniform in size, in others very variable, while in some cases they are quite distinctly of two different sizes. Sometimes they are all open, sometimes part of them are filled more or less completely with colored deposits which latter are generally plainly visible also in the pores exposed in longitudinal sections; in some woods they have numerous thin cross-partitions which, in the cross-section, give them the appearance of being filled with whitish deposits.

5. *Resin-canals.*—These are found only in the Pines and in the Lauan family. In the Pines they are widely scattered and found singly or in very small groups. In the Lauan family they form conspicuous concentric lines, which are the most striking distinguishing mark of this family. Unlike growth-rings, these lines occur at extremely irregular intervals from the heart outward and, moreover, they are incomplete; that is, they almost never form entire circles. (See fig. 17.)

6. *Ripple-marks.*—In addition to the above elements to be observed in the cross-section, there is one structural feature often found in longitudinal sections; namely, ripple-marks. These are extremely fine, transverse, parallel, generally slightly wavy lines, resembling the marks made by ripples on a smooth beach. They are most common in the tangential section, but in some woods are found in all longitudinal sections. Generally they are plainly to be seen (often better on split than on planed surfaces) with the naked eye; in fact, they are frequently more distinct to the naked eye than under the lens. They are found in very many woods, but in certain cases serve to distinguish two woods that might otherwise be confused.

It is hardly necessary to say that color, odor, taste, hardness, weight, fine or coarse and straight or twisted grain are all aids

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[3] Pores, or vessels, as they are also called, must not be confused with the internal cavity of individual cells, or of wood fibers. Pores are longitudinal cavities surrounded by cells.

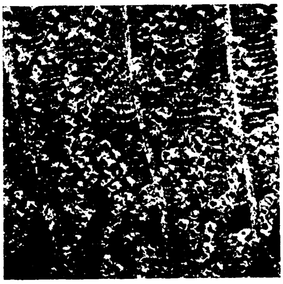

Fig. 1. Oak.

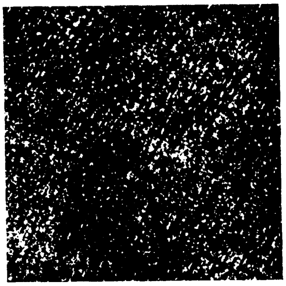

Fig. 2. Tamayuan.

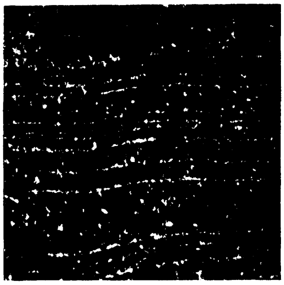

Fig. 3. Duguan.

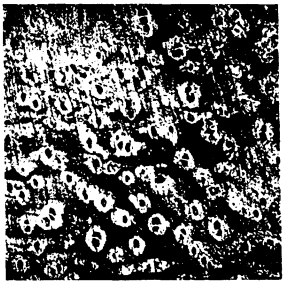

Fig. 4. Acle.

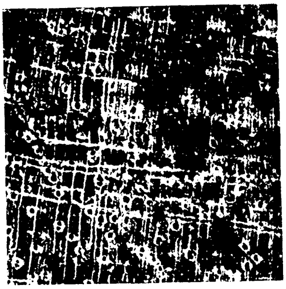

Fig. 5. Batete.

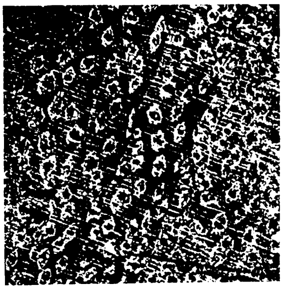

Fig. 6. Ipil.

Fig. 7. Narra.

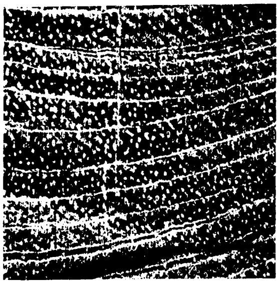

Fig. 8. Camuning.

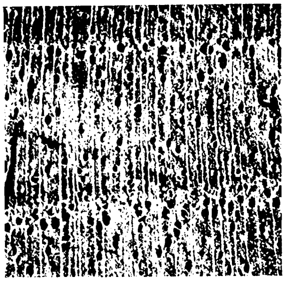

Fig. 9. Calantas.

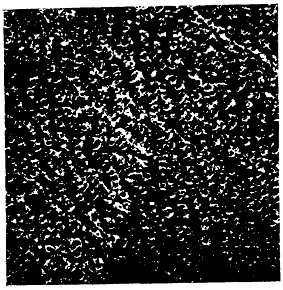

Fig. 10. Tucang-calao.

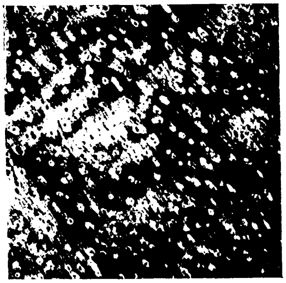

Fig. 11. Alupag.

Fig. 12. Lanutan.

Plate I.

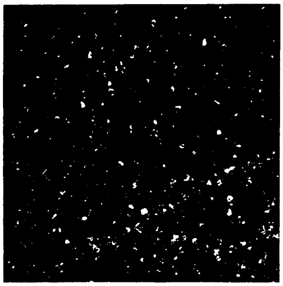
Fig. 13. Dungon.

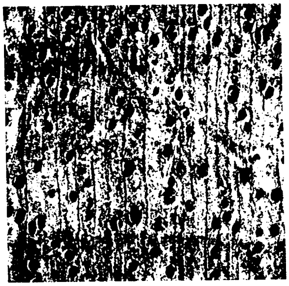
Fig. 14. Lumbayao.

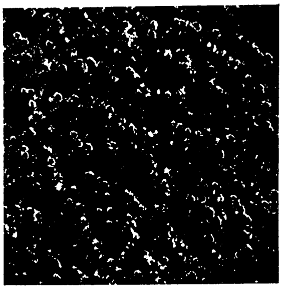
Fig. 15. Palo Maria or Bitaog.

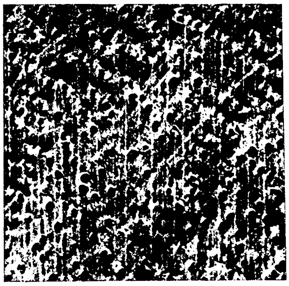
Fig. 16. Mangasinoro.

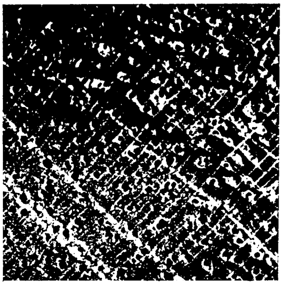
Fig. 17. White Lauan.

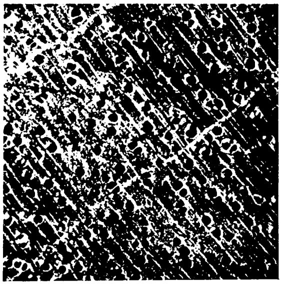
Fig. 18. Red Lauan.

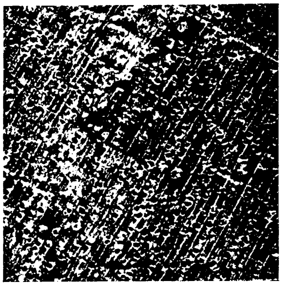
Fig. 19. Tanguile.

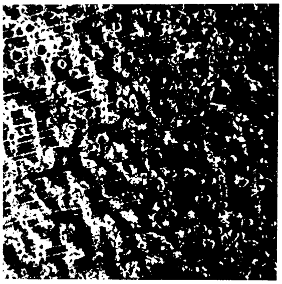
Fig. 20. Apitong.

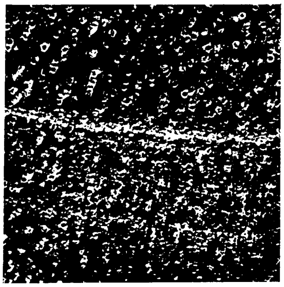
Fig. 21. Guijo.

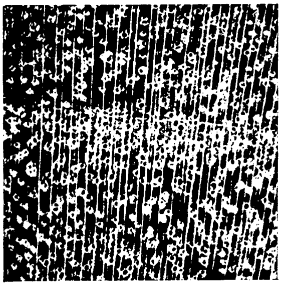
Fig. 22. Mangachapuy.

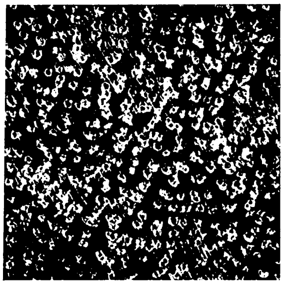
Fig. 23. Guisoc.

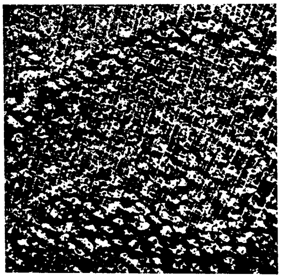
Fig. 24. Narig.

Plate II.

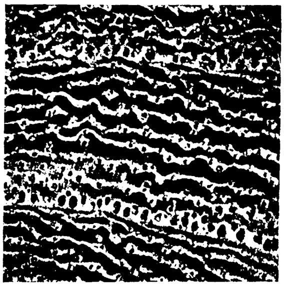

Fig. 25. Banaba.

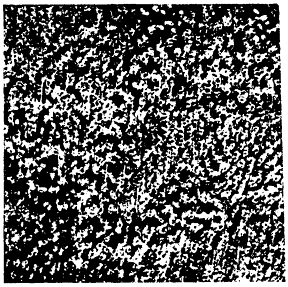

Fig. 26. Pagatpat.

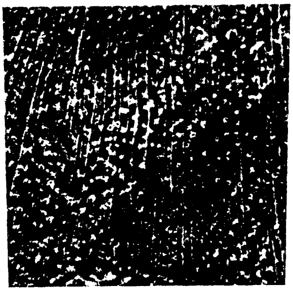

Fig. 27. Bacauan.

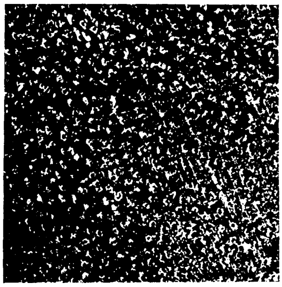

Fig. 28. Macaasim.

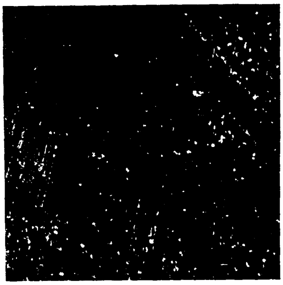

Fig. 29. Mancono.

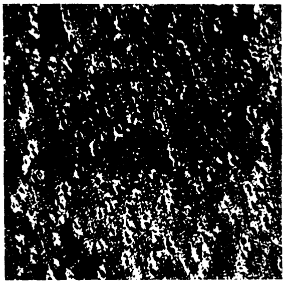

Fig. 30. Betis.

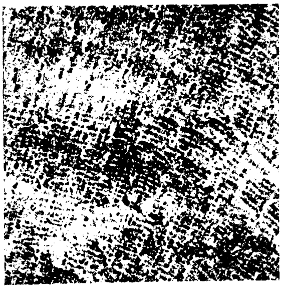

Fig. 31. Nato.

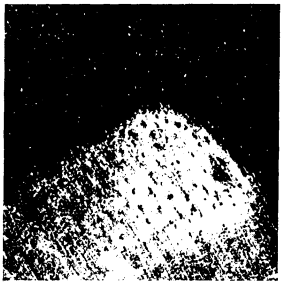

Fig. 32. Ebony.

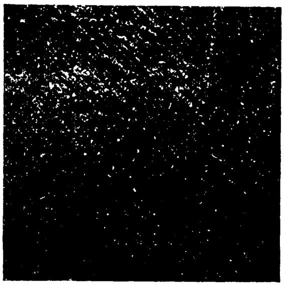

Fig. 33. Lanete.

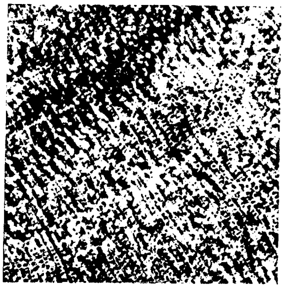

Fig. 34. Molave.

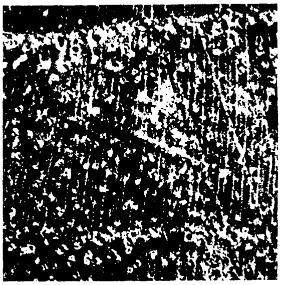

Fig. 35. Teak.

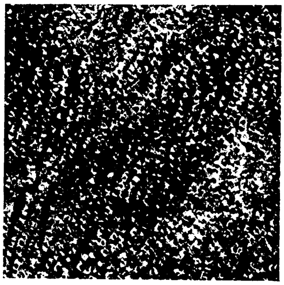

Fig. 36. Calamansanay.

Plate III.

to identification. In fact, many woods, once well known, can be recognized by one or more of these qualities without further recourse to the lens.

DESCRIPTIONS.

PINE FAMILY (*Pinaceae*).

BENGUET PINE (Mountain Province, Zambales) and **TAPULAO** (Zambales, Mindoro). Sapwood whitish; heartwood with alternate rings of light-colored wood with little resin and of darker, harder, and very resinous wood; no pores; scattered resin-canals; strong resinous odor.

AGOHO FAMILY (*Casuarinaceae*).

AGOHO (seacoasts and sandy river valleys) and **MOUNTAIN AGOHO** (mountains in many islands). Sapwood grayish, not sharply marked off from reddish brown to dark brown heartwood; very hard; very heavy; fine grain; pithrays fine to very thick, the large ones scarce in Agoho and numerous in Mountain Agoho; pores small, in irregular, branching radial lines; soft tissue forming fine, wavy, irregular, concentric lines, resembling those of Oak, but less conspicuous.

OAK FAMILY (*Fagaceae*).

OAK (many species in most hill and mountain regions). Sapwood yellowish; heartwood yellowish brown to dark brown; hard; heavy; rather fine grain; numerous very fine pithrays and a small number of very thick ones, the latter very conspicuous both in cross and radial section; pores and soft tissue very similar to Agoho. (Fig. 1.)

ANTIPOLO FAMILY (*Moraceae*).

ANUBING (probably in all islands). Sapwood whitish, rather soft; heartwood bright golden yellow when fresh, on exposure rapidly turning brown and in time greenish black; slight, disagreeable odor when fresh; hard; heavy; rather coarse grain; difficult to work and to finish; pithrays fine to moderately thick, not numerous; pores not large, somewhat variable, scattered; both pores and pithrays often containing a whitish substance; soft tissue in thin irregular rounded patches surrounding pores, not conspicuous.

ANTIPOLO (probably in all islands). In all respects very similar to Anubing, but considerably lighter and softer and with fewer white deposits.

TAMAYUAN FAMILY (*Olacaceae*).

TAMAYUAN (widely distributed). Sapwood grayish white, sharply marked off from pinkish to dark reddish brown heartwood; hard, but brittle; heavy to very heavy; very fine, straight grain; pithrays very fine, straight and regular; pores very small, evenly scattered; soft tissue inconspicuous, surrounding pores and forming very fine, irregular transverse lines between pithrays; all elements of nearly even color. (Fig. 2.)

ILANG-ILANG FAMILY (*Anonaceae*).

The woods of this family are rarely seen in commerce, except occasionally in mixed lots of lumber. They deserve mention here because they are very widely distributed and have a most characteristic and uniform structure. They may be roughly grouped together under the name of:

The WHITE LANUTANS. Sapwood very large, whitish or pale yellow; heartwood generally very small, perhaps none at all in some species, but where found, generally brownish; soft to moderately hard or hard; light to moderately heavy; fine, straight grain; pithrays fine to moderately thick, conspicuous, not very numerous; pores rather small, scattered; soft tissue forming very distinct, regular, conspicuous crossbars between pithrays, like rungs of a ladder.

DUGUAN FAMILY (*Myristicaceae*).

DUGUAN (all islands). Sapwood light-colored, but not sharply distinguished from heartwood; heartwood pale red to light reddish brown; soft; light; rather fine grain; pithrays fine, numerous, rather irregular; pores small, scattered, sometimes in radial rows of two to four; soft tissue forming fine, but distinct concentric lines at rather regular intervals. (Fig. 3.)

BATICULIN FAMILY (*Lauraceae*).

MARANG or WHITE BATICULIN[4] (widely distributed but not abundant). Pale yellow, fading to dirty white; faint aromatic odor, when fresh; soft; light; fairly fine grain; pithrays fine, not very numerous; pores small, scattered, tending to form diagonal rows; soft tissue surrounding pores in narrow rings.

The YELLOW BATICULINS. These come from a number of widely distributed, but scattered species, all having woods of similar character; bright yellow, some with greenish, some with reddish or brownish tints or streaks; more or less lasting camphor-like odor; soft to moderately hard; light to moderately heavy; fine grain; pithrays finer and pores smaller than in Marang.

MALACADIOS. Glossy deep yellow; odor, when fresly cut, reminding of aromatic vinegar; grain finer than Baticulin.

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[4] This is the wood described by Foxworthy under "Baticulin."

LIUSIN FAMILY (*Rosaceae*).

LIUSIN (almost all islands). Sapwood light-colored, not sharply distinguished from heartwood; heartwood pale red to light reddish brown; faint acid odor, when fresh; very hard; very heavy; fine grain; very difficult to work, dulling all tools with extreme rapidity; pithrays fine; pores rather large, oval, scarce, irregularly scattered; soft tissue forming irregular, wavy concentric lines, similar to those in Agoho and Oak.

NARRA FAMILY (*Leguminosae*).

ACLE (very widely distributed, but scarce). Sapwood whitish, sharply distinguished from heartwood; heartwood light to dark, dull brown; shavings give brown color to water; distinct peppery odor and slightly pungent taste; when quite fresh, lathers freely when rubbed with water or saliva; hard; heavy; not difficult to work, but dust provokes sneezing; pithrays very fine, not numerous; pores moderately large, irregularly scattered, sometimes in groups of from two to four or five; whitish deposits in some pores; soft tissue in conspicuous, irregularly rounded patches about pores. (Fig. 4.)

BANUYO (Luzon, Masbate, Burias, Ticao, Samar, Negros). Sapwood whitish; heartwood pale golden brown to dark brown, sometimes distinctly reddish; softer and lighter than Acle; fine grain; growth-rings bounded by a line of dense, dark tissue; pithrays very fine; pores rather small; evenly scattered; soft tissue in rounded patches about pores.

BATETE (widely distributed, not abundant). Sapwood light red; heartwood reddish brown with irregular lighter and darker streaks; gives purplish brown tinge to water; hard; heavy; rather difficult to work; growth-rings not conspicuous, but distinct; pithrays fine; pores small; all cut surfaces exude a dark oil, which spreads into greasy brown splotches and streaks. (Fig. 5.)

IPIL (widely distributed, along coasts and in Cagayan Valley). Sapwood whitish; heartwood bright yellow when fresh and sound, turning on exposure to very dark reddish brown or almost black; peculiar, characteristic odor difficult to describe; hard to very hard; heavy to very heavy; fine grain; difficult to work; growth-rings bounded by a very fine, light-colored line; pithrays fine; pores small, scattered, many filled with sulphur-yellow deposits; soft tissue forming irregular patches about pores. (Fig. 6.)

NARRA (probably in all islands). Sapwood whitish, generally sharply distinguished from heartwood; heartwood pale straw color through all shades of rose and red to dark blood red or dark reddish brown; gives water a red color, which, in shallow layers, turns to a changeable greenish blue; faint, sweet, cedary odor; moderately hard to hard; moderately heavy to heavy; rather coarse and often twisted grain; easy to work; growth-rings marked by an irregular line of pores at beginning, pores in remainder of each ring smaller and irregularly scattered; pithrays very fine, much less conspicuous than the numerous irregular, wavy and branching, concentric lines of soft tissue; ripple-marks often very distinct on tangential section. (Fig. 7.)

SUPA (Tayabas, Camarines, Albay, Mindoro). Sapwood pink; heartwood yellow, turning to rich golden brown on exposure; colors water reddish brown; faint pungent odor; hard; heavy; very fine grain; rather difficult to work; growth-rings bounded by fine, light line; pithrays fine, but distinct; pores very small; soft tissue inconspicuous; ends, and less frequently sides, stained by dark oil exuding from pores.

TINDALO (very widely distributed, but scattered). Sapwood whitish, sharply distinguished from heartwood; heartwood orange to dark red, darkening with exposure; odor reminding of taste and odor of raw beans or peanuts; hard; heavy; fairly fine, generally straight grain; not difficult to work; pithrays distinct, but not conspicuous; pores moderately large, scattered; soft tissue very conspicuous, partly forming long, fine concentric lines passing mostly between the pores, partly elongated patches about the pores; pores and soft tissue with a tendency to arrange themselves in a rough "herringbone" pattern.

CAMUNING FAMILY (*Rutaceae*).

CAMUNING (widely distributed, but small and scattered). Sapwood clear yellow; heartwood brownish; very hard; very heavy; very fine grain; pithrays very fine; pores very small; soft tissue forming numerous, very fine, concentric lines which often branch. (Fig. 8.)

CALANTAS FAMILY (*Meliaceae*).

CALANTAS (very widely distributed, but scattered). Sapwood pinkish; heartwood pale to dark red; distinct cedary odor; soft; light; rather coarse grain; ring-porous, but not always conspicuously so; pithrays rather fine, but fairly distinct; pores small to moderately large, the largest at the beginning of each ring; frequently dark, reddish, glistening, varnish-like deposits in pores; soft tissue forming continuous concentric lines of very uneven width, often inclosing the pores. (Fig. 9.)

PIAGAO AND TABIGI (mangrove swamps). Sapwood whitish; heartwood pale red to dark red or reddish brown; moderately hard to hard; moderately heavy to heavy; very fine grain; easy to work; growth-rings marked by fine, light-colored line of soft tissue; pithrays fine, numerous, regular; pores small; soft tissue inconspicuous; ripple-marks often present, but not generally very distinct.

TUCANG-CALAO (widely distributed, but scarce). Sapwood grayish; heartwood red; strong camphor-like odor; hard; heavy; fine grain; pithrays fine; pores moderately large, irregularly scattered, singly or in small groups; soft tissue surrounding pores and also forming numerous irregular, often wavy, tangential lines of variable length. (Fig. 10.)

MANGO FAMILY (*Anacardiaceae*).

AMUGUIS (probably all islands). Sapwood pale red; heartwood coppery red; slight sour odor; moderately hard to hard; moderately heavy to heavy; fine, glossy grain; pithrays very fine; pores small to moderately large, numerous, evenly scattered, with occasional glistening deposits; soft tissue scarce, in thin rings about pores; ripple-marks sometimes present, but not conspicuous.

DAO (probably all islands). Sapwood very large, light brownish or reddish gray; heartwood darker, with irregular blackish streaks; moderately hard; moderately heavy; rather coarse, straight grain; pithrays fine, light-colored, distinct; pores moderately large or large, scattered singly or in groups of two or three, with glistening deposits; soft tissue in very thin rings about pores.

PAHUTAN (probably all islands). Sapwood very large, pinkish or brownish gray; heartwood irregular in shape, coffee brown, often with alternating belts of lighter and darker color; moderately hard to hard; moderately heavy; fine, smooth grain; pithrays fine, indistinct, whitish; pores small, scattered; soft tissue in small patches about pores and forming fine, straight, not very conspicuous, concentric lines.

ALUPAG FAMILY (*Sapindaceae*).

ALUPAG (very widely distributed, but rather scarce). Sapwood very pale red; heartwood red to very dark brown; very heavy; very hard; fine, straight grain; very difficult to work; growth-rings distinct, though not conspicuous, outer part darker than inner; pithrays very fine; pores small, scattered, with pithy cross-partitions giving appearance of whitish deposits; soft tissue in small patches about pores. (Fig. 11.)

MALUGAY (almost all provinces, most abundant in Mindoro). Sapwood very pale red; heartwood pale red to red; moderately hard to hard; moderately heavy to heavy; very tough; fine, straight grain; pithrays rather fine, numerous; pores moderately large, scattered, with partitions as in Alupag; soft tissue in thin rings about pores and forming thin, continuous, often wavy concentric lines bounding growth-rings.

MALUBAGO FAMILY (*Malvaceae*).

LANUTAN (central Luzon). Sapwood whitish; heartwood violet or purplish, with distinct alternating bands of lighter and darker color marking the growth-rings; faint, pleasant odor, when fresh; moderately hard to hard; heavy; tough; fine, straight grain; pithrays fine, distinct; pores small, numerous, scattered; soft tissue in thin rings about pores; ripple-marks always present and generally very distinct. (Fig. 12; note that this photograph was taken on the corner of a square block, showing ripple-marks on both radial and tangential sections.)

DUÑGON FAMILY (*Sterculiaceae*).

DUÑGON (widely distributed, in dry hill forests, but not abundant.) Sapwood grayish or pinkish, not sharply marked off from heartwood; heartwood reddish brown to dark chocolate; hard to very hard; heavy to very heavy; very tough; rather fine and sometimes crossed grain; difficult to work; pithrays moderately large; pores small to moderately large, scattered; chalky white deposits filling sometimes a few, sometimes very many pores; old knots and heart-cracks often containing white stony deposits; soft tissue in thin rings around pores and forming fine, indistinct cross-lines between pithrays. (Fig. 13.)

DUÑGON-LATE (coast and coastal swamps). Not distinguishable from Duñgon by structure; said to have wider sapwood and on the average, perhaps, somewhat lighter in weight and color.

LUMBAYAO (Zamboanga, Cottabato, Basilan). Sapwood very pale red, merging gradually into heartwood; heartwood pale red to dark red; soft to moderately hard; light to moderately heavy; rather coarse, straight grain; easy to work; pithrays moderately large, rather far apart, conspicuous in radial section and plainly visible as narrow dark lines 1 to 2 millimeters long in tangential section; pores large, rather evenly scattered; soft tissue in smooth, thin rings about pores; ripple-marks often present, but generally not conspicuous. (Fig. 14.)

LUMBAYAO-BATU. A wood known sometimes by this name and sometimes as Duñgon is found in the same region as Lumbayao;

has the color, weight and (nearly) hardness of Duñgon with the structure of Lumbayao; possibly only a very hard variety of the latter.

PALO MARIA FAMILY (*Guttiferae*).

PALO MARIA, or **BITAOG** (all coasts except swamps). Sapwood reddish white to pale red; heartwood red; hard; heavy; tough and difficult to split; fine, curly grain; pithrays very fine, indistinct; pores small to moderately large, scattered or in irregular wavy rows or in small groups, some partly filled with whitish deposits; soft tissue forming numerous, fine, broken, very wavy concentric lines about one-half millimeter apart; these lines make a beautiful, fine zigzag pattern on the tangential section. (Fig. 15.)

BITANHOL, or **PALO MARIA DEL MONTE** (almost all provinces). In general appearance and structure like Palo Maria, but somewhat lighter in weight and color and much straighter grained.

LAUAN FAMILY (*Dipterocarpaceae*).

In this family, which produces about 75 per cent of all the timber in the Philippines, there is a wide variation in hardness, weight, color, and even in structure, but certain broad characteristics apply to practically all the "dipterocarps." The interrupted and irregularly spaced rings of resin-canals have been mentioned in the introduction. They are more or less conspicuous in all the woods of the family except Narig. It must be kept in mind, though, that their absence from a given specimen does not show that the wood is not a dipterocarp, for, on account of their irregular arrangement, small specimens are easily cut out in such a way as not to contain any portion of a ring. In color the majority are of various shades of yellow, red, or reddish brown. A few, especially the Apitongs, have a resinous odor; in weight and hardness they go through nearly the whole scale. Growth-rings are very scarce, and, when found, very indistinct. The pithrays are fairly uniform throughout the family, but the pores vary from very small to large. Some, besides the resin in the resin canals, contain it also in the pores; other deposits in the pores very rarely occur. The soft tissue is generally very irregularly arranged, rarely forming any kind of a pattern. Ripple-marks occur seldom and are very rarely distinct.

The dipterocarps are the dominant family in all the high, dense forests of the Islands. All the woods described here are abundant and widely distributed unless their distribution is otherwise described.

The timbers of this family may be grouped under five names: Lauan, Palosapis, Apitong (including Guijo), Mangachapuy (or Dalingdingan), and Yacal.

THE LAUAN GROUP.

(Arranged roughly by color, ranging from nearly white through red to dark reddish brown.)

MANGASINORO (southern Luzon, Mindanao). Sapwood and heartwood scarcely distinguishable; pale straw color, darkening but little on exposure to light; soft to moderately hard; light; resin-canals very scarce; pithrays fine; pores moderately large, round, scattered, but tending to form a diagonal net-like pattern; soft tissue visible only in very fine rings about pores. (Fig. 16.)

KALUNTI (Zamboanga, Basilan). Very like Mangasinoro, but with less yellow tint; pores larger, less rounded and often arranged in radial strings of three to five or six; resin-canals often present.

MALAANONANG (northern Luzon to Tayabas). Very like Mangasinoro, but darker (very light brown) and with soft tissue forming fine short irregular lines, often connecting tangentially two or more pores; also with occasional rings of resin-canals.

WHITE LAUAN. Sapwood and heartwood grayish white, latter in large trees with very pale brown tinge; soft to moderately hard; light to moderately heavy; resin-rings often very far apart, but, when present, very distinct; pithrays of two kinds, very fine and moderately thick, latter very distinct; pores large, scattered singly or in irregular groups of three to six; soft tissue in thin rings about pores. (Fig. 17.)

ALMON (Laguna to Sorsogon, Negros, Mindanao). Sapwood when fresh nearly white, turning grayish brown on exposure to light; heartwood pinkish to very pale red, fading to dull yellow on exposure (even when varnished); soft; light; resin-rings widely separated, and distinct; pores large, scattered singly or in groups of two to five; soft tissue in thin rings about pores and very fine, irregular, scattered crosslines between pithrays.

BAGTICAN. Sapwood gray; heartwood pale reddish brown; moderately hard; moderately heavy; fairly close grain; resin rings frequent; pithrays rather thin, not very distinct; pores rather small to moderately large, numerous, evenly scattered; soft tissue forming tangentially elongated patches about pores and numerous, short, irregularly scattered cross-lines.

MAYAPIS. Sapwood brownish or pinkish; heartwood light red to red; soft to moderately hard; light to moderately heavy; finer and closer grain than any of preceding; resin-rings frequent and distinct; pithrays moderately thick; pores moderately large, irregularly scattered; soft tissue in slightly irregular rings about pores and forming an irregular network where pores are crowded.

TIAONG (Luzon). Sapwood pale, pinkish or brownish; heartwood bright red to pale brownish red; soft to moderately hard; light to moderately heavy; finer grain than red Lauan; resin canals in some specimens at quite regular intervals accompanied by belts of lighter and darker wood giving appearance of growth-rings; pithrays rather thin; pores small to moderately large, evenly scattered; soft tissue in thin rings about pores.

RED LAUAN (Luzon, Mindanao, Negros; abundant in last). Sapwood light grayish brown; heartwood pale red to dull brownish red; very soft to moderately hard; very light to moderately heavy; resin-rings numerous, distinct; pithrays moderately thick; pores medium to large, numerous, evenly scattered, sometimes with glistening deposits; soft tissue in very thin rings around pores and in thin, widely scattered and indistinct cross-lines between pithrays. (Fig. 18.)

TANGUILE. Sapwood grayish brown; heartwood pale red to dark brownish red; soft to moderately hard or hard; light to moderately heavy; resin-canals less frequent and smaller than in red Lauan; pithrays finer; pores smaller and less numerous; soft tissue as in red Lauan. The best grade of Tanguile is the hardest, heaviest, finest grained, and least liable to insect attacks of all the Lauans. (Fig. 19.)

PALOSAPIS GROUP.

Palosapis [5] (several species with wood of uniform appearance and structure, widely distributed, but abundant only in Bataan). Sapwood nearly white, on exposure easily staining to dirty gray; heartwood pale yellow, often with rose streaks, sometimes completely rose-colored when perfectly fresh, but fading soon to almost uniform light yellowish brown; slight disagreeable odor, when fresh; soft to moderately hard; light to moderately heavy; finer grained than most of the Lauans; resin-rings very infrequent; pithrays numerous, of two kinds, fine and moderately thick, latter very distinct; pores medium size, very evenly scattered; soft tissue inconspicuous, in rather irregular rings about pores.

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[5] This is the wood described by Foxworthy under "Mayapis."

THE APITONG GROUP.

APITONG (several species with same general appearance and structure). Sapwood gray or light brownish gray; heartwood pale ashy red to dark reddish brown; strong odor of resin when fresh, the odor noticeable even in old, dry specimens when worked over; moderately hard to hard; moderately heavy to heavy; grain variable, from fine to rather coarse, generally straight, but sometimes forming very regular waves diagonally across the face of a plank; resin-rings numerous and conspicuous; pithrays variable, in some specimens fairly uniform, in some distinctly of two sorts, fine and moderately thick; pores moderately large to large, irregularly scattered, often lined with glistening resin which is also evident in longitudinal sections; soft tissue very irregular, in rather thick irregular rings about pores, in irregular patches and in short, broken, ill-defined lines. (Fig. 20.)

GUIJO. Sapwood pale gray; heartwood ashy brown, often with distinct reddish tinge; faint odor of resin; hard; moderately heavy to heavy; grain fine, fairly straight, glossier than Apitong; also glossier than Apitong in cross-section; resin-rings frequent, narrower and more sharply defined than in Apitong; pithrays fine, not conspicuous; pores rather small, scattered; soft tissue less abundant than in Apitong, in thin, irregular rings about pores and in short, thin, tangential lines; ripple-marks sometimes present, but not conspicuous. All the elements in Guijo are smaller and more sharply defined, so that the cross-section has generally a cleaner look, so to speak, than that of Apitong. (Fig. 21.)

THE MANGACHAPUY GROUP.

MANGACHAPUY and DALINGDINGAN (several species, almost all provinces). Sapwood almost white; heartwood yellowish white to bright straw color, in some species with bright green streaks when fresh, rapidly turning to dark yellowish brown on exposure to light, the green streaks becoming dull; moderately hard to hard; moderately heavy to heavy; grain fine, generally very straight; easy to work; resin-rings widely separated, sometimes very conspicuous; pithrays rather fine, numerous; pores rather small, evenly scattered; soft tissue in very thin rings about pores. The hardest sorts of Mangachapuy grade almost into the Yacals. (Fig. 22.)

THE YACAL GROUP.

YACAL. Sapwood pale yellowish brown; heartwood yellow to yellowish brown, turning dark brown on exposure; slight acid odor when fresh; hard to very hard; heavy to very heavy; grain fairly fine; surface of cross-section glossy; resin-rings frequent; pithrays fine, numerous, uniform; pores small, evenly scattered; soft tissue in thin rings about pores and in fine irregular cross lines between pithrays. (See illustration of Guisoc, Fig. 23.)

MALAYACAL (Mindanao). Very much like Yacal, but grain slightly coarser, pores somewhat larger, soft tissue more abundant, often forming longer tangential lines.

GUISOC (central and southern Luzon, Leyte, Mindanao). Very like Yacal, but somewhat finer of grain and darkening much less on exposure. (Fig. 23.)

NARIG (Luzon, Leyte, Mindanao). Sapwood rather large, pale yellowish white, easily staining to dirty grayish brown; heartwood pale straw color, sometimes with greenish streaks or mottlings and turning brown on exposure; hard to very hard; heavy to very heavy; grain extremely fine, dense and straight; pithrays numerous, of two sorts, moderately thick and very thin; pores smallest in the whole family; soft tissue almost absent; resin-canals very scarce, when present, very inconspicuous. (Fig. 24.)

BANABA FAMILY (*Lythraceae*).

BANABA (widely distributed, but scattered). Sapwood pinkish; heartwood pale red to dull reddish brown; hard; moderately heavy; grain fairly distinct; conspicuously ring-porous; pithrays fine, indistinct; pores at beginning of ring large, others small; dark, glistening deposits; soft tissue in conspicuous, wavy interrupted tangential lines. (Fig. 25.)

BATITINAN (same distribution). Sapwood grayish white; heartwood gray to brown with olive tinge; otherwise resembling Banaba, but belt of large pores wider, soft tissue more abundant and forming less wavy and more continuous concentric lines and larger rings about pores.

PAGATPAT FAMILY (*Sonneratiaceae*).

PAGATPAT (mangrove swamps, most abundant in Mindanao). Sapwood pinkish or yellowish white to light brown; heartwood light brown to very dark brown; fishy or swampy smell when fresh; distinct taste of salt; moderately hard to hard; heavy; grain fine, very even and straight; easy to work; pithrays fine, numerous, indistinct; pores small, evenly scattered, with a tendency to arrange themselves in radial rows; very rarely sulphur-yellow deposits; soft tissue scarcely noticeable. (Fig. 26.)

There is occasionally found in Mindanao a very light yellowish or pinkish wood of the same structure and other characteristics as Pagatpat; it may be a mere variety, or perhaps another species of the same genus.

BACAUAN FAMILY (*Rhizophoraceae*).

BACAUAN, BACAUAN LALAKI, BUSAIN, LANGARAI, POTOTAN, and POTOTAN LALAKI (all mangrove swamps). Sapwood yellowish white, sometimes rather sharply distinguished, but generally merging through all shades of yellowish red and red into the (in large trees) dark reddish brown heartwood; hard to very hard; heavy to very heavy; fine, straight grain; rather difficult to work; pithrays fine, numerous, wavy, rather conspicuous in radial section; pores small, rather few, often divided by thin partitions; soft tissue very scanty, surrounding pores. (Fig. 27.)

TALISAY FAMILY (*Combretaceae*).

BINGGAS (widely distributed, but scarce). Sapwood nearly white to very pale brown, not sharply distinguished from heartwood; heartwood dark gray or grayish brown with irregular dark purplish streaks; hard; heavy; fine grained; growth-rings present, thin, not sharply defined nor conspicuous; pithrays very fine, indistinct except some white ones that show clearly; pores small, arranged in broad concentric bands along growth-rings; soft tissue in ill-defined, small rings about pores.

CALUMPIT (almost all provinces, but not abundant). Sapwood yellow to pale yellowish brown; heartwood light reddish brown; gives dirty straw color to water; moderately hard; moderately heavy; fairly fine, often wavy grain; growth-rings present, but generally ill-defined; pithrays fine, indistinct; arrangement of pores somewhat like Binggas; soft tissue surrounding and sometimes connecting pores.

DALINSI (Luzon, Palawan). Very like Calumpit, but darker brown, harder, heavier and finer grained; pores smaller; soft tissue much less prominent; colors water pale yellow.

SACAT (widely distributed, but scarce). Sapwood brownish, sometimes bright yellow; heartwood grayish or yellowish brown; colors water pale yellow; moderately hard; moderately heavy;

indistinct growth-rings; pithrays fine, fairly distinct; pores moderately large, rather evenly scattered, some with dark glistening and some with whitish deposits; soft tissue not conspicuous, surrounding pores and forming longer and shorter concentric lines of varying width.

TALISAY (beaches and river bottoms everywhere). Sapwood light yellowish brown; heartwood clear reddish brown; colors water yellow; moderately hard; moderately heavy; growth-rings bounded by a narrow band of darker, denser wood; pithrays fine; pores medium size; soft tissue in thin rings about pores and irregular, wavy, tangential lines joining the pores.

TOOG (Sorsogon, Samar, Leyte, Masbate, Agusan). Sapwood grayish to pale red, rather sharply marked off from bright brownish red heartwood; moderately hard; moderately heavy; growth-rings very broad, marked by a band of darker, but not denser wood; pithrays moderately thick; pores moderately large, evenly scattered or in groups of two to four; soft tissue in thin rings about pores and forming an irregular, but evenly distributed net-work of fine, irregular, short lines between pores and pithrays.

MACAASIM FAMILY (*Myrtaceae*).

MACAASIM and MALARUHAT (probably in all islands, but nowhere abundant). The woods that come into the market under these names come from a number of species and vary considerably in color, hardness, and grain, but their structure is fairly uniform; sapwood commonly gray or pale brown, sometimes distinctly yellowish; heartwood generally gray or grayish brown, sometimes with greenish, yellowish or reddish tinge; faint acid odor; fine, straight grain; pithrays very fine; pores small to medium, scattered; soft tissue in numerous, fine, wavy, irregular and interrupted tangential lines surrounding and connecting the pores. (Fig. 28.)

MANCONO (Mindanao, Palawan, Leyte, Ticao, Sibuyan). Sapwood small, pinkish; heartwood yellowish brown to dark brown; hardest and heaviest wood in the Islands; extremely difficult to work; pithrays very fine; pores very few, small, scattered; soft tissue hardly noticeable. (Fig. 29.)

BETIS FAMILY (*Sapotaceae*).

BANSALAGUIN (widely distributed, but rather scarce). Sapwood very pale red; heartwood deep red; distinct bitter taste; lathers when rubbed with water or saliva; very fine, glossy grain; very hard; very heavy; difficult to work; pithrays very fine, indistinct; pores small, in straight or oblique radial rows, with scant yellowish deposits; soft tissue about pores and forming very numerous, wavy, and interrupted concentric lines.

BETIS (Luzon, Samar). In all respects similar to Bansalaguin, except that it is of a duller red color, slightly softer, lighter and coarser grained, and less glossy. (Fig. 30.)

NATO, MALACMALAC, and MANICNIC (one or more of these three and other species in probably all provinces). Sapwood whitish to very pale red; heartwood grayish red to red; some kinds lather slightly, at least when fresh; soft to moderately hard; light to moderately heavy; fine grain, often very regularly wavy; easy to work; pithrays fine, indistinct; pores small to medium, in short, straight radial rows sometimes with whitish deposits; soft tissue as in Bansalaguin, but more conspicuous. (Fig. 31.)

EBONY FAMILY (*Ebenaceae*).

ATA-ATA (Visayan Islands, Mindanao). Sapwood large, white when fresh, turning grayish in seasoning; heartwood very small, dead black or with grayish streaks; hard to very hard; heavy to very heavy; fairly fine grain; pithrays extremely fine; pores very small, scattered or in short radial lines; soft tissue in very numerous, fine concentric lines.

CAMAGON, or MABOLO, and BOLONGETA (probably all provinces, but not abundant). Sapwood reddish, in the former slightly lighter and finer grained; heartwood black with ashy, reddish or brownish streaks; other properties and structure as in Ata-ata.

EBONY (almost all islands, but scarce). Sapwood almost white when fresh, turning very light gray in seasoning, generally very sharply distinguished from heartwood; heartwood jet-black, sometimes with grayish streaks; harder, heavier, finer grained than preceding three woods; structure the same. (Fig. 32.)

DITA FAMILY (*Apocynaceae*).

LANETE (several species, in probably all islands). Sapwood and heartwood not distinguishable; whitish to ivory; slightly disagreeable odor when fresh; soft to moderately hard; moderately heavy; grain very fine, straight; pithrays very fine, indistinct; pores very small in short radial rows; soft tissue scarcely perceptible. (Fig. 33.)

MOLAVE FAMILY (*Verbenaceae*).

MOLAVE (probably all provinces). Sapwood hardly distinct from heartwood; yellowish white to pale brown, often with greenish tints; turns greenish yellow when treated with an alkali and colors water greenish yellow; slight bitter taste; slight characteristic odor; hard to very hard; grain very fine, often crossed; not difficult to work; growth-rings sometimes obscure, sometimes very distinct; pithrays fine to very fine, indistinct; pores small, scattered; soft tissue inconspicuous, forming very thin rings about pores, and scattered. (Fig. 34.)

TEAK (not native, planted in southern islands; commercial wood imported). Sapwood dirty white or yellowish; heartwood dark golden yellow, darkening to brown or almost black with age; characteristic aromatic odor; ring-porous; pithrays moderately thick; an irregular row of large pores at beginning of ring; soft tissue in rather irregular rings about pores. (Fig. 35.)

BANCAL FAMILY (*Rubiaceae*).

CALAMANSANAY (several species, probably almost all islands). Sapwood yellowish or pinkish when fresh, turning to very pale yellowish brown; heartwood yellow with irregular pink or red mottlings, some of a uniform pink or red, but always fading to a more or less mottled yellow or dull yellowish brown; hard; heavy; fine, often crossed grain; rather difficult to work; pithrays very fine, numerous, indistinct; pores small, numerous, scattered; soft tissue inconspicuous, scattered. (Fig. 36.)

A bright yellow wood with the structures of Calamansanay, though slightly coarser, is found in southern Luzon, Samar, and Leyte. The species that produces it is not known, but it is evidently of this family. It is called Pantauon and Tiroron in Bicol and Alintatao in Visaya. Although it seems to be common in the regions mentioned, it is practically unknown in the Manila market and has no accepted commercial or official name.

We ascribe beauty to that which is simple; which has no superfluous parts; which exactly answers its end; which is related to all things; which is the mean of many extremes. Things may be pretty, rich, graceful, handsome and still lack beauty.—G. BALDWIN BROWN.

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The striving for artistic effect is as instinctive in childhood as in primitive man, and no worker ever loses it until he loses all pride in his handiwork. It is the source of every fine art. It is self-expression, which is at its best when bodied forth on doing things worth doing well.—*Selected.*

LATER SUGGESTIONS FOR CORN DEMONSTRATIONS.

By NORTH H. FOREMAN, Inspector of School Gardens and Sites.

CORN demonstrations are being held throughout the Philippines as leading features of the corn campaign. A successful demonstration must contain certain definite features and should conform in spirit to the objects of the corn campaign; namely, to foster the growing of corn by increasing the hectarage, by bettering the yield, and by acquainting the people with the use of corn as a food for man. These matters must be handled in a manner to make certain of reaching and attracting the attention of the Filipino farmer, who is the actual grower and the chief consumer of corn. He must be present, must enjoy the festivity, must become interested in the display of farm machinery and corn features, and must not only eat corn foods but also learn how they are best prepared. Experience has shown that the farmer will attend such demonstrations if they include features in which he is interested.

As a general plan, the demonstration should be given in special booths grouped around some central feature and made attractive by decorations suggestive of the uses of corn. An excellent plan of arrangement would be to have a central booth in which to show the leading corn features and to have the other booths placed so as to form a compact group. The central booth should be divided into seven sections, each displaying salient points pertaining to the production or the consumption of corn. Boys trained to explain to the public the various features of each section should be in charge. These explanations should consist of prepared three-minute talks given alternately in English and in the local dialect. The use of the dialect is advisable, since the Filipino farmer does not yet understand any language other than his mother tongue. Each of the seven sections of the central booth should be decorated and properly placarded, and should contain the articles to be used by the demonstrators in illustrating their talks.

1. The first section should contain (*a*) sterile plants, (*b*) plants with two ears, (*c*) plants with one ear, (*d*) very good plants, and (*e*) poor plants.

2. The second section should contain (*a*) good ears of corn,

(*b*) ears with good and poor tips, (*c*) ears with good and poor butts, (*d*) ears of dent corn, (*e*) ears of flint corn, (*f*) very poor ears, and (*g*) fair ears.

3. The third section should contain (*a*) a collection of good and bad seed kernels, (*b*) good seed ears, (*c*) ears "tipped and butted." (*d*) ears showing from what part of the ear to take grains for testing, (*e*) a box seed germinator with the squares marked and numbered, containing sprouted seeds, and (*f*) two or three plate germinators showing sprouting seeds.

4. The fourth section should contain (*a*) good ears of corn, (*b*) poor ears of corn, (*c*) a boy engaged in shelling corn by hand, and (*d*) a hand corn sheller.

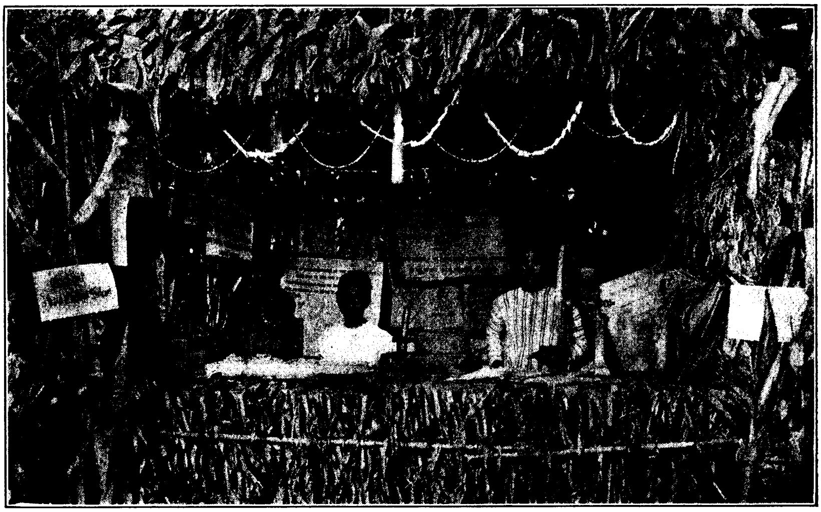

Plate I. The preparation of corn meal, booth at Pasig, Rizal, corn demonstration.

5. The fifth section should be devoted to an exhibit of corn meal, and should contain (*a*) a stone mill in actual operation, (*b*) a modern hand corn mill in operation, (*c*) preparing corn meal with pestle and mortar, (*d*) a sieve for sifting meal, and (*e*) some glasses or jars containing well prepared yellow and white corn meal.

6. The sixth section should contain an exhibit of things detrimental to good corn, including (*a*) corn stalks containing smut, (*b*) a bottle containing weevils, (*c*) three or four weevil-eaten ears of corn, (*d*) ears with tightly closed tips, (*e*) insect damaged corn stalks for which a remedy is known.

7. The seventh section should be devoted to corn products such

as (*a*) a display in glasses of all the corn dishes served at the demonstration, (*b*) corn meal, (*c*) a bundle of fodder, (*d*) a small corn-husk mattress, (*e*) a corn-husk door mat, (*f*) corncob pipes, (*g*) syrup made from corncobs, and (*h*) corn pith. Tables of statistics should be used freely in this booth.

As the crowd gathers around this booth at the close of the civic parade, attracted by the music which will serve to announce the opening, the young man in Section No. 1 will give his illustrated talk. As soon as he has finished, the young man in Section No. 2 will explain the features in his section, and so on around the entire booth. When all sections have been explained the talks will be repeated in the same order throughout the demonstration. A demonstration carried out in this manner could not be otherwise than instructive to the people.

Plate II. Corn pyramid, corn demonstration, Calamba, Laguna.

The several booths devoted to the preparation and serving of corn food should be attractively decorated. Filipino girls properly costumed and instructed as to the correct method of preparing and serving corn dishes should be in charge of the food booths. Certain demonstrators in each booth should be employed in cooking the corn food while others are engaged in giving short talks. Every corn recipe demonstrated should be printed both in English and in the local dialect and be available for distribution. In a series of six booths the illustrated talks should begin with Booth No. 1 and continue in the same manner as outlined for the central booth.

To illustrate the trend of such talks let us consider hominy. The young lady giving the talk should take a branch of the guava bush with the leaves attached, so that it may be readily recognized by the people, and in the course of her talk should show the charred stick, guava ashes, how the lye is made, some dry corn, how the hard outside is removed, the washing, the cooking, and the prepared hominy. Such an illustrated talk given in the local dialect, and readily understood by even the unlettered rural Filipino must be highly instructive. At the close of the talk the hominy recipes should be distributed and samples of prepared hominy served. The young ladies in the other booths may give their talks in the same manner. The talks should be short, preferably not longer than three minutes each, and to the point, and they should be repeated at intervals.

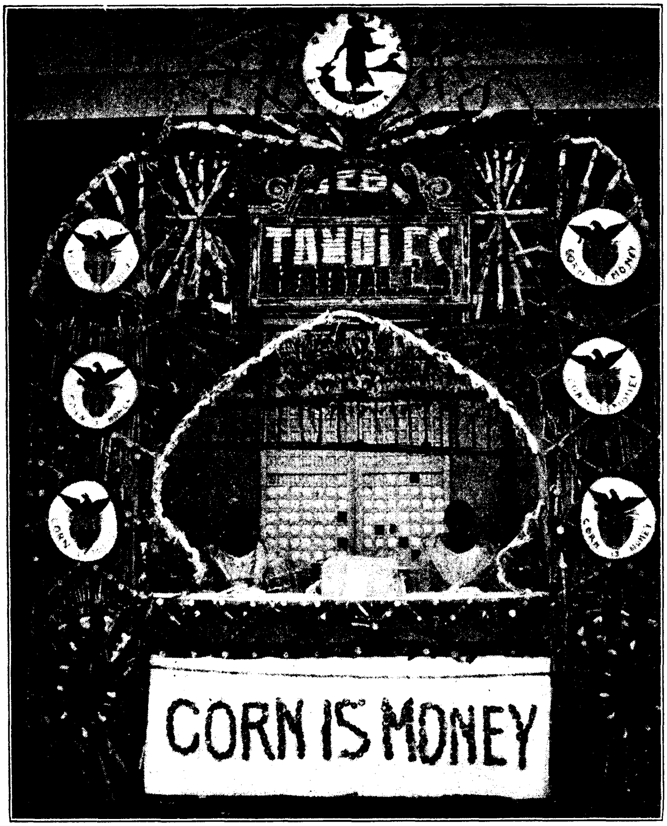

Plate III. An attractive booth, Malabon, Rizal, corn demonstration.

If thought desirable, an adjoining booth may contain a display of farm implements. This booth should be handled in the same manner as the other features of the demonstration.

The short talks explaining the things shown at corn demonstrations are the most valuable features of the campaign. Such a small number of the people are readers of newspapers and periodicals that information is mainly received through word of mouth. Accordingly, instructive lectures are very popular, as Filipinos are always willing to remain for hours, even under uncomfortable conditions, to hear instructive talks dealing directly with matters pertaining to their daily lives.

Plate IV. King Corn, Calamba, Laguna.

While certain athletics may be included in the program, care should be exercised to see that games, exhibits and entertainment features are given minor consideration so as not to overshadow the corn topics. The best demonstrations have included only a baseball or basket ball game and good music in addition to the corn features.

Enthusiasm for the occasion should be aroused by having the people decorate their homes and the public buildings with corn.

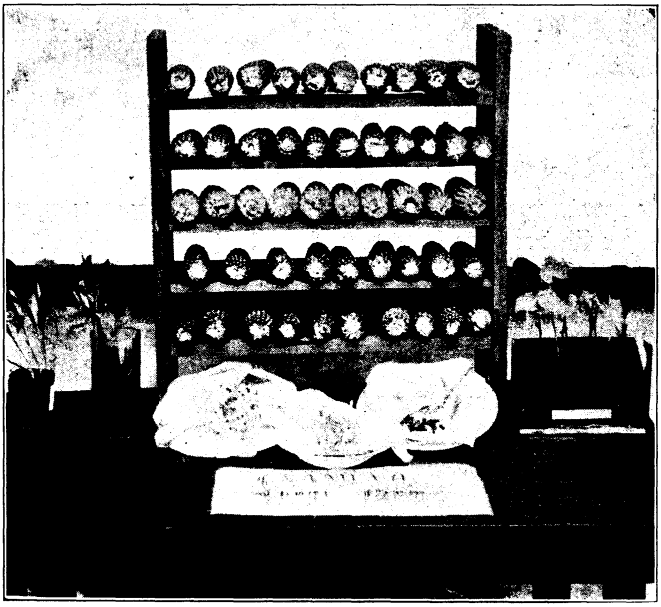

Plate V. Seed-testing exhibit, Batangas corn demonstration.

Even the public vehicles may be decorated in order to lend interest and spirit to the occasion.

The day should be devoted to corn topics. Both young and old should be interested and made to think of corn as something better than a food for animals, to be used by man only after an apology for the poverty that compels him to place such food before a guest. Corn is king even in such a prosperous country as the United States of America and there is no reason why it should not become at least a good wholesome supplement to rice in the Philippines.

When I was keeper of the herds I always saw to it that all of my cattle were strong, healthy and growing, that there was water in abundance and plenty of feed. When I had charge of the public granaries I never slept until I knew that all was secure and cared for against the weather and my accounts as true and correct as if I were going on my long journey to return no more. My advice is to slight nothing, never leave things to chance, nor say, "Nobody will know—this is good enough."—CONFUCIUS.

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There are five good principles of action to be adopted: To benefit others without being lavish; to encourage labor without being harsh; to add to your resources without being covetous; to be dignified without being supercilious; and to inspire awe without being austere.—CONFUCIUS.

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The State of Minnesota has engaged Dr. Ernest B. Hoag, a health expert, to travel about the State and demonstrate to the citizens that rational conservation of the mental and physical health of children is possible and practicable with the means already at hand. Three plans are proposed: (1) Organization with a medical officer and a nurse or nurses; (2) organization with a school nurse or nurses only; (3) organization by the employment of a simple nonmedical health-survey on the part of the teacher only. To make it possible for every community, however small, to possess the necessary technical knowledge, the State board of health will maintain at the State capital a "clearing house of information concerning child hygiene, medical supervision, the teaching of school hygiene, and the like."

EDITORIAL AND OFFICIAL.

The Filipino Teachers' Vacation Assembly in Manila.

IT IS already time for teachers to begin planning for the Vacation Assembly in Manila. In order to obtain the greatest possible benefit from attendance at the summer classes held at the Philippine Normal School and the Philippine School of Arts and Trades, careful consideration must be given to the selection of the courses of study. Instances have arisen where teachers have come to Manila to study some branch of industrial work which they were later unable to use, due to the lack of the required material in their localities. Such cases are not the fault of the school authorities in Manila, but can clearly be attributed to the lack of judicious planning. Every teacher should carefully plan his vacation studies in advance with special reference to the work in which he will be engaged during the coming school year.

Careful planning is also needed in respect to financial arrangements. The sessions at both of the Insular schools will be six weeks in length. The average cost of living for provincial students in Manila for this period is about ₱40. No teacher who is required to depend wholly upon his own resources should plan to attend these institutes without this amount of money. It is understood, of course, that this sum does not include expenditures for books and clothing which many teachers are tempted to buy upon their arrival in Manila, owing to the fact that they have a larger variety to select from, and at lower prices, than in the provinces; nor does it include the cost of transportation to and from Manila. Many a teacher has come to Manila and, long before the Assembly was over, found himself short of funds with which to pay his board or his return transportation. This is not only extremely embarrassing to the teacher, but is also detrimental to the proper conduct of classes in the assemblies. Too much attention can not be given by teachers and supervisors to the question of proper financial arrangements.

The courses in the Insular schools will be along the same general lines as those offered last year. Special opportunities will be given for six weeks of intensive work along a special line. Opportunities will also be given for a review of those subjects in which the teacher feels himself deficient. In addition to the established lines of school work, the teacher who has never attended the Vacation Assembly in Manila will be more than repaid by the trip itself and by the special features connected with the regular work. The teacher who has never had the privilege of making a trip to Manila will return home with a far better idea of his own country than he could possibly obtain in any other manner. The carefully planned excursions to the Ice Plant, the Bureau of Printing, the cigar, hat, and furniture factories, the cemeteries, and other points of interest, can not fail to broaden his horizon more than any amount of class room training. Attendance at the special lectures provided for the Assembly gives the teacher an extraordinary opportunity of hearing and seeing the leaders in both public and private life. The stimulus given by these inspirational addresses will help carry the hearer over many a rough place in the future. The personal contact with 1,500 other teachers from many parts of the Islands necessarily tends to lessen the provincialism of all who come to the Assembly.

In brief, the Vacation Assembly aims to give all of its attendants a broader and saner aspect of life by means of inspirational lectures, by visits to the scenes of commercial activities, and by bringing into close relation the many representatives of all parts of the country. The Assembly also aims to impart as much definite practical knowledge along some one particular line as the teacher can absorb in the short space of six weeks. In order to bring about these two principal ends, it is not sufficient for the school authorities in Manila to provide carefully for all of the exigencies which may arise, but it is of equal importance for the teacher in the province to make sure of his financial arrangements, and to select his courses with an eye to the future. To aid him in this matter a complete announcement will be made later.

The total number of teachers who took advantage of the opportunity for further study at the Vacation Assembly for 1912 reached 1,719, about one-fifth of all the Filipino teachers in the Islands. Of these, 260 were from Pangasinan, 227 from Bulacan, 167 from Batangas, 122 from Nueva Ecija, and 112 from Pampanga. The attendance from the other provinces ranged from 1 to 70. There were 28 industrial courses given; 478 pupils were enrolled in the course in basketry, 343 in gardening, 201 in slipper making, 196 in embroidery, 194 in elementary hand weaving, 177 in Irish crochet, 171 in hat weaving, and 102 in sewing. The other industrial courses given, the enrollments in which ranged from 2 to 79, were as follows: Commercial work, cooking, shop exercises, lessons on simple furniture construction, advanced woodwork, intermediate industrial drawing, finishing, loom and mat weaving, lectures on teaching woodwork in manual training classes, free-hand decorative design, estimating applied to woodwork, lessons in advanced furniture construction; reports, property, and correspondence of trade school teachers; primary industrial drawing, saws, shop mathematics, elements of building design, advanced mechanical drawing, lectures on teaching woodwork in trade schools, and mechanical and free-hand lettering.

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Improving Present Facilities for Industrial Work.

With few exceptions most of the various lines of industrial work now being pursued in the public schools of the Philippines have been developed or originated through the inherent skill and artistic appreciation possessed by the Filipino and American teachers. Much of the work in basketry, macramé, raffia, buri, abacá and pandan has been evolved from materials and along lines that differentiate these products in an unmistakable way from those peculiar to other countries. Two important branches, however, owe their importance and place in the industrial course to influence and assistance received from the outside: Embroidery and lace work are of foreign derivation, though certain features of this work have become quite typical of this country through the employment of such native materials as jusi and piña; in woodwork a characteristic note has also been obtained through the use of high grade woods that distinguish products of this class from those made elsewhere.

The degree to which teachers and pupils have relied on their own resources both in the wide utilization of local industrial materials and in the effort to create original forms, patterns, and designs has undoubtedly had important effect in stimulating and developing the technical ability of those engaged in the work as well as in making known the wealth of industrial materials available in the various localities.

This relative isolation and self-dependence on the part of many school districts and divisions is soon to be minimized and certain facilities at the disposal of the General Office to be offered to the field in such form that greater coördination in many of the industrial lines may hereafter be secured throughout the Islands. This will be effected through a bulletin explaining in detail the work and organization of the industrial museum of the Bureau of Education and the industrial library and exhibits which are maintained in connection with it. All these features essential to an effective plan of industrial work have been in existence for some time but until now had not attained such definite form that this information could be submitted to the field to be of practical assistance.

The industrial museum now contains most of the important industrial plants of the Philippines; these have been conveniently classified, listed, and mounted and the methods followed explained in the bulletin. There has also been provided an extensive collection of raw materials and articles fabricated from them; samples of nearly all typical and standard handicraft work, embroidery, and lace are included. The plan upon which the articles may be secured for loan purposes is stated. The arrangements for filing industrial specimens are given in detail together with samples of tags, labels, and other forms used, also drawings for industrial cabinets and filing cases, for possible help in the establishment of local or provincial museums. The industrial library with its numerous collections of books and publications on nearly all industrial subjects will, through the medium of the bulletin, become accessible to teachers. The museum will furthermore continue to render an important service in the determination of the botanical classification of all plants which may be submitted from the field for identification and in giving technical advice upon the merits and commercial possibilities of newly designed articles.

The above is but a synopsis of the contents of the bulletin; as with others that have heretofore been published on industrial subjects by the Bureau of Education it is believed that it will serve to promote both greater efficiency and higher standards of work in Philippine schools.—L. R. S.

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Features of the Baguio Assembly for 1913.

Plans are well under way for the Sixth Annual Teachers' Vacation Assembly which will be held in Baguio during the months of April and May, 1913. Teachers generally will be interested in knowing something of the program which is being prepared for them, and the teachers who are interested in the industrial work will be particularly concerned with the schedule of conferences and classes which is projected.

As in other years, the activities of the Assembly will be divided into four general groups: Educational features, athletics and outdoor sports, indoor amusements, and professional work. Among these activities, the program for professional advancement stands by no means least in the estimation of directors and teachers. In fact, the annual conferences have been considered by many to be the most important features of the Baguio Assembly; and of those conferences, industrial education occupies fully one-half of the time. In addition, half of the classes of instruction offered at the Assembly have been in industrial subjects, and emphasis on these features will be continued. The reports of the various committees appointed at the conferences held in 1911 have been made the subject of careful study on the part of the directors and have played no small part in determining the industrial policy followed during the past year.

For the Sixth Assembly, the schedule of conferences and industrial classes will follow very closely that of the assembly of 1912. There will be offered courses of five weeks' duration in embroidery and lace making, basketry in both the coil and web-weave type, abaca and macramé articles, mat weaving, methods in housekeeping and household arts, and applied design in relation to embroidery, textiles, and basketry. These courses will be under the direction of the best qualified American and Filipino industrial teachers, and will be open to all members of the Bureau of Education who may desire to attend the classes. With a competent staff of instructors assured and special quarters to be provided for the purpose under the roof of the new social hall, it is believed that the industrial courses for the next teachers' vacation assembly will afford an exceptional opportunity for those teachers desiring either to specialize in or to familiarize themselves more thoroughly with any of the standard lines of handicraft work.

The best models and specimens in the Bureau Museum, whether of local or foreign make, will be transferred to Baguio to form a temporary exhibit during the assembly. Conferences will be held as heretofore upon important phases and features of school industrial work, and teachers pursuing or interested in any particular industrial branch will have the opportunity to exchange impressions and embody them in the form of definite recommendations to the General Office of the Bureau of Education.

Figures for the 1912 season indicate that the conferences were well attended and that the enrollment in all of the classes was good. A large number of the men and practically all of the women each took at least two industrial courses. As an instance, it may be stated that 95 enrolled in the classes in hemp work.

About one-fifth of the entire teaching corps of the Islands is directly engaged in industrial instruction, either in a teaching or supervising capacity, some of them giving all and others only a part of their time for the purpose. This group includes both Americans and Filipinos. Familiarity with the processes of handicraft work and knowledge of the preparation and selection of materials and of the handling of the finished product mean a great deal to the success of those teachers who have to do with industrial work. Time and opportunity are usually lacking during the school year for acquiring this knowledge, and the Teachers' Vacation Assembly at Baguio is the most convenient medium for offering these short courses in the most important of the handicrafts, particularly to those teachers who are engaged in the work rather in a supervisory way.

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A man is relieved and gay when he has put his heart into his work and done his best.—EMERSON.

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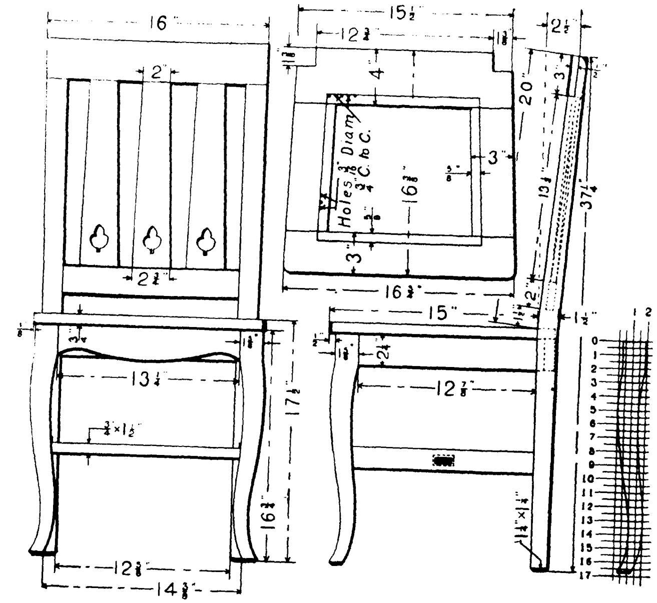
As a nation approaches the more formal and classic period of its existence, the heart atrophies and beauty is hidden under gray veils. It is rather in newer lands with all their progress and blunders, with all their joys and difficulties, with all their crudenesses and vitalities, that art flourishes.

The growth of the arts, especially of the industrial art, seems to be always concurrent with the actual development of social vitality.

It (craft work) is the expression of a more or less creative people of their actual needs, and their joy in meeting their own wants. Wherever craft work has developed along these lines, it has been interesting, satisfactory and permanent in its hold on the people.

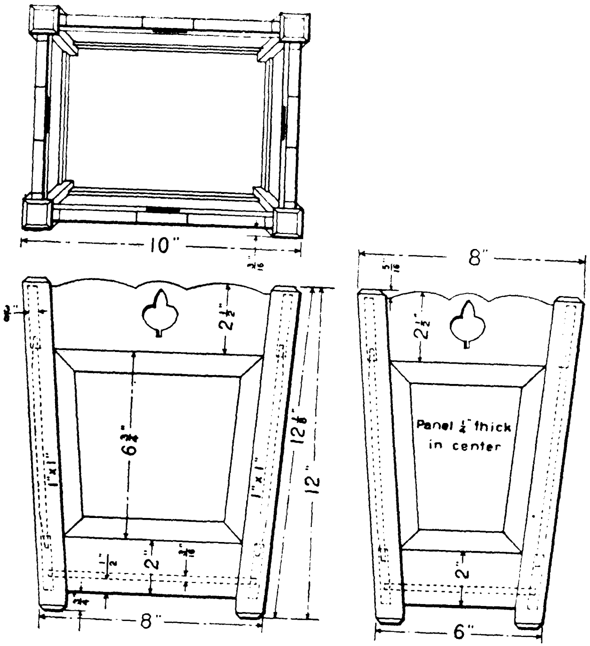
And he (the editor of the Craftsman) began to realize that when people want houses and furniture, pottery and fabrics suited to their own ideals and interests, want them adapted to their houses and beautifully made, then only will the craft spirit be stirred within them, that unless they are making these things for themselves, or encouraging the making of them for themselves and for others, unless they feel the necessity of them and the value of them, it is impossible to hope for the birth of that creative spirit which is essential for the progress of handicrafts.

—*From the Craftsman.*



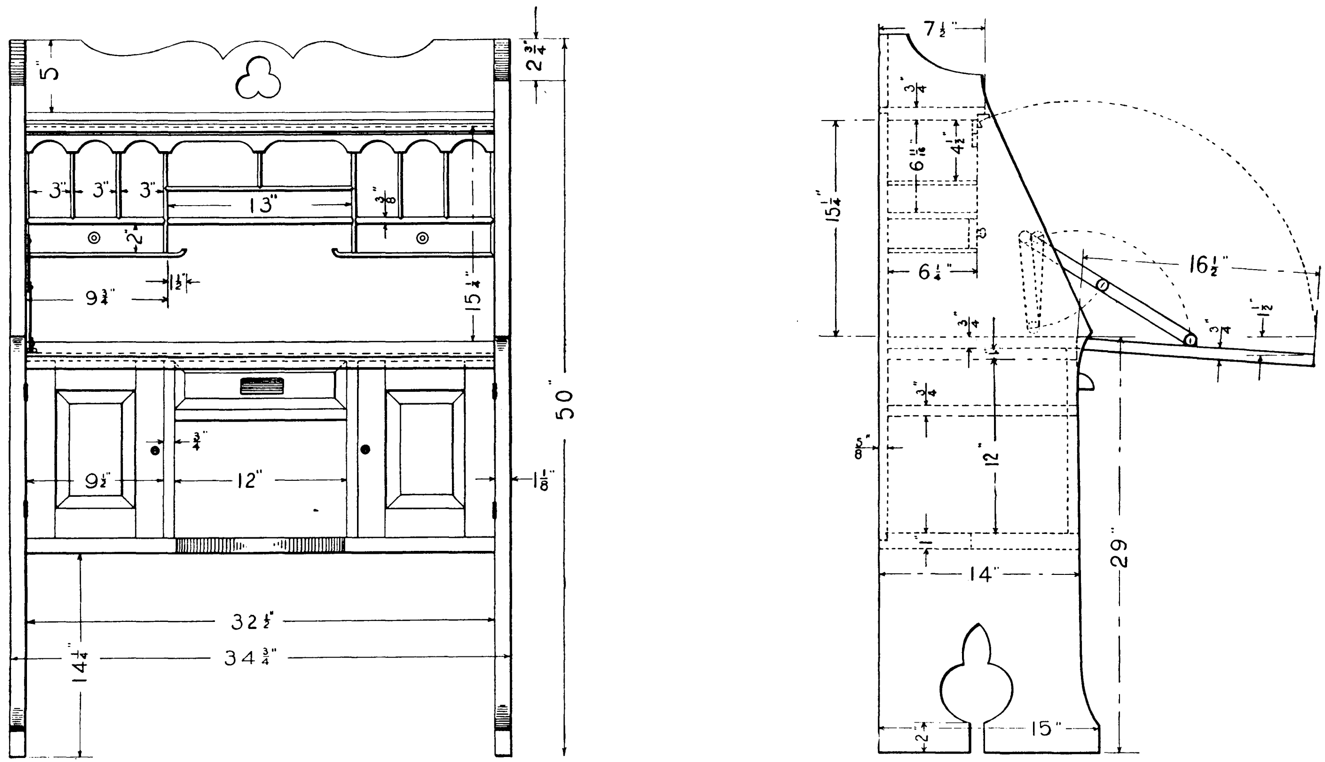
Lady's writing chair with rattan bottom.

Lower rail of back curves back ¼ inch in center; upper rail curves back ¾ inch.



Waste-paper basket.

These two figures, with the desk on the next page, make a very pretty and popular lady's writing set.



Lady's writing desk.

This is the main piece of the lady's writing set, of which the other figures appear on the preceding page.

INDUSTRIAL NOTES.

TANAUAN SCHOOL NURSERY.

The Tanauan School Nursery was founded in June, 1910. Tanauan, Batangas, was chosen as the site for this school because of its central location in what is now the chief citrus fruit belt of the Philippines. During the school year of 1910, one-half hectare (1¼ acres) of land was planted with seedlings and work begun by starting 10,000 orange, 500 mulberry, 1,000 coffee, and 200 cacao plants.

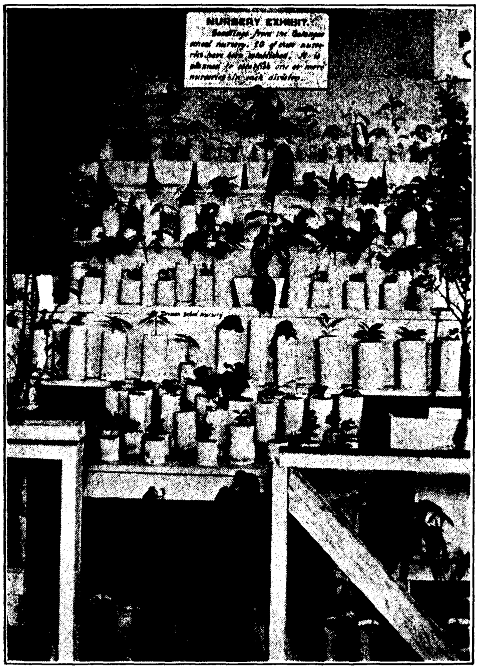


Photo by Bruce Ingersoll.

Tanauan nursery exhibit, Education exhibit, First Philippine Exposition.

During the first year seedlings to the value of ₱200 were shipped to the Provinces of Mindoro, Camarines, Bulacan, Cavite, and Manila. The year 1911 proved very severe for the development of the nursery on account of the long continued drought and the inadequate artificial supply of water. However, some 10,000 additional plants were set out, 200 of which were cuttings of choice roses. During the year the sales increased many times over that of the previous year.

A further enlargement of the work is planned for the present year. It is intended to extend the nurseries to the homes of all pupils who live within visiting distance of the school.

A suitable plot will be fenced and a small home nursery of high standard will be maintained. In this way the school will acquaint all fruit growers with modern methods of culture; conduct actual demonstrations; study local conditions; and furnish a supply of young seedlings of the best varieties. The boys at this school are being taught budding and the placing of grafts. This work will be extended as fast as suitable buds and scions are available, so that finally seedlings will be grown only for "nursery stock."

A fine exhibit of seedlings from this nursery was shown at the First Philippine Exposition held in Manila, February 3 to 10, 1912. Some 5,000 plants were displayed in the Batangas provincial booth, forming an exhibit which was awarded both a gold medal and a diploma. A smaller but very creditable exhibit was a feature of the Industrial Exhibition of the Bureau of Education—*George Whiting.*

Editor's Note.—Mr. Geo. Whiting, who has had actual charge of the nursery since it was started, has lived for a number of years in the citrus fruit belt and has made an extended study of the local fruit industry.

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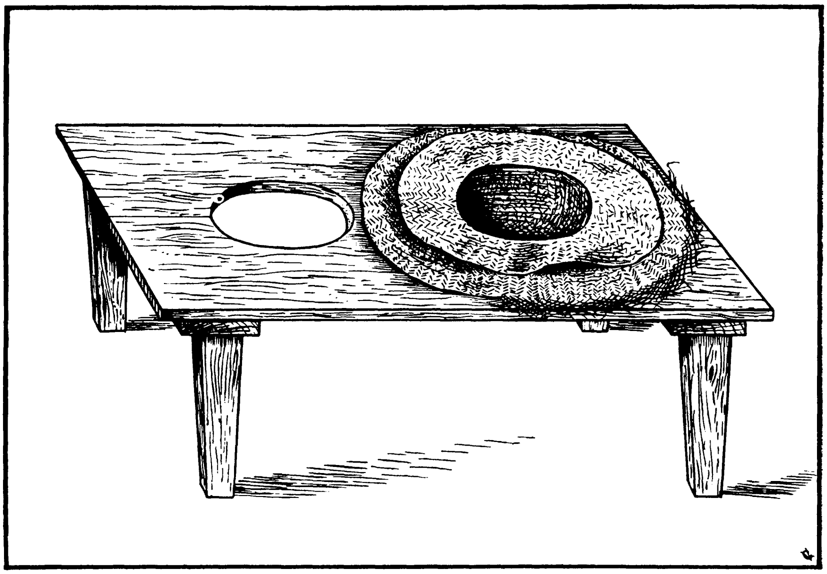

The method of weaving hats in the Philippines is slightly different from that employed by the weavers in Java. In the Philippines a block is employed while the crown is being woven. In Java the block is not utilized at all. However, in Java a small board or table with a hole in the center is used by the hat weavers. After the crown of the hat has been woven, it is placed in the hole and the weaving on the brim is begun. The use of this table does not necessarily increase the production of the hats but it enables the weavers to work at an advantage on the brim. In order that the crowns may be smooth, regular and of uniform finish, the use of the block is advised. It is believed that it would be a good plan to encourage the introduction of the table in connection with the hat block already in use in the Philippine Islands. Figure 1 illustrates the table and its use.—J. F. M.

Since the establishment of American Government in the Philippine Islands, it has been the policy of the Bureau of Education to encourage in every possible way the reading of good school journals and other periodicals, and their distribution among the teachers and students of the public schools. The results in the years that have passed have been very gratifying. With the entrance of The Philippine Craftsman into the field of industrial and educational periodicals, some interesting facts have been brought to light concerning the number of subscriptions which are being placed for the various school papers and magazines by the teachers of the public schools. In one province alone—Union—the number of subscriptions that have been placed by the teachers totals 127. The list is distributed as follows:

42	Philippine Education
13	Philippine Craftsman
7	Manila Weekly Times
4	Filipino Student
6	Normal Instructor
5	Primary Plans
4	Pathfinder
8	Modern Priscilla
4	Youth's Companion
2	Philippine Agricultural Review
1	Ladies' Home Journal
3	Correct English
6	Philippine Free Press
2	Manila Times
1	Elementary School Teacher
7	Philippine Planter
1	Review of Reviews
1	Weekly Inter-Ocean
2	Cosmopolitan
2	Woman's Home Companion
2	Filipino Youth
1	Everybody's Magazine
1	World's Work
1	Delineator
1	Cablenews.

The records of this office now show more than 1,300 paid subscriptions. The majority of these are in the Philippines, of course, with some scattering subscriptions in the United States and in foreign countries. At the head of the list of school divisions stand the Provinces of Tarlac and Laguna, with 104 and 90 subscriptions respectively.

A CORRECTION.

In the September issue of The Philippine Craftsman the following corrections should be noted: On page 189 "Plate XXII" should be changed to read "Plate XXIV," and in the first paragraph on page 192 the letter "a" should be canceled and the figure "2" substituted.

NEEDLEWORK DESIGN CRITICISMS.

Following are criticisms upon designs found in the November number of the "Modern Priscilla" and the September and October numbers of the "Paris Journal of Fancy Work and Fashion":

The "Modern Priscilla" for November contains ideas and designs generally more suitable for the ladies of an American home than for partially trained Filipino pupils in the public schools. However, several of the illustrations furnish good ideas for a practical and painstaking teacher in the needlework department of our public schools.

Several of the designs for pincushions illustrated on page 6 could be adapted to school use; for example, the long one with the bit of reticella shown on page 6, No. 12-11-2, would be easier to make and more attractive if design No. 12-11-8 were substituted; a further improvement would be made if the eyelet and ribbon joining seen in No. 12-11-9 were substituted for the mattress style. Design 12-11-9 is too elaborate; it would be better to omit the net or silk ruffle at the edge and substitute a design adapted from No. 12-11-7.

Although cut work is very difficult for children to make, yet it would seem advisable to introduce a little of it into the schools for the sake of variety; a very pretty cutwork pincushion can be made by using design and form in No. 12-11-3; instead of the mattress style of edge, it would be better to use the eyelet and ribbon of No. 12-8-19.

Design 12-11-1 gives an opportunity for the use of the true filet and Venetian lace motifs for the top, but the top should be fastened to the bottom by means of eyelets and ribbon as seen in No. 12-11-9. The wheat design, No. 12-11-7, is simple and pretty and very appropriate because of the amount of open work. The remaining designs are rather too elaborate for small cushions.

The cross-stitched colored cushion, No. 12-11-14, on page 8, could easily be made by small children under the supervision of a teacher and would form a pleasant spot of color among the mass of work on white goods done in the schools. The best designs on page 9 are Nos. 12-11-19 and 12-11-18, the others being too elaborate.

On page 11, the best designs for school work are Nos. 12-11-24, 12-11-34, 12-11-35, and 12-11-33, though the teacher, of course, should exercise great care in the choice of colors and shades. On page 12 the best design is 12-11-38; No. 12-11-46 would be pretty indeed, if the correct shades and materials were properly combined. It is always much better to omit all work in color unless the teacher is prepared to direct and supervise it very closely indeed. Nos. 11-11-44 and 12-11-47 would also be attractive and the latter could be made by small children. Probably the most desirable designs on page 15 are 4 and 5; Nos. 7, 8, and 9 could be well made if foundations of wood or metal were obtainable; illustrations Nos. 12-11-54, 12-11-56, 12-11-57 and 12-11-58 are simple and suitable for beginners in embroidery. No. 12-11-60 requires more skill and expensive material.

If cut work is desired in the school, two good designs are shown in figs. 12-11-61 and 12-11-63. On page 23, fig. 12-11-70 is simple and pretty and can be easily made.

The main objections to the designs for basketry on page 24 probably would be the difficulty in keeping them in an upright position while in use.

The simple tatting edges and insertions are generally easy for small children to make, but the skill and time necessary to make articles illustrated on page 27 would better be spent in Irish crochet so long as it is so much in demand.

The designs on page 30 are good, with the exception of No. 12-11-73. This would be more appropriate for a towel if the two side branches were eliminated, leaving only the center wreath and initial. The best patterns for handkerchiefs on page 35 are Nos. 12-11-85, 12-11-80, 12-11-78, and 12-11-84; generally it is better to finish the edge by means of a dainty hemstitched hem rather than by filets or scallops.

Designs Nos. 12-4-28, 12-7-17, 12-7-16, 12-8-19, 11-8-12, and 12-7-13 on pages 76 and 77 could be made by the average Filipino girl and would find a ready sale; pattern No. 12-8-51 is simple and artistic and could easily be adapted for use on a towel.

Probably the best design for school use in the October number of the "Paris Journal of Fancy Work and Fashion" is found on page 12: the other designs of this journal seem inappropriate in one way or another. In the September number of the same journal is a good design for Renaissance lace, fig. 4. For sake of variety, where time, material, etc., permit, Venetian and filet lace might be introduced; figs. 5 and 6 on page 10, and figs. 1 and 2 on page 11 could be done by beginners.—E. M. M.

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From the division of Bohol, Acting Superintendent W. B. Beard sends the following notes prepared by various teachers in the division:

The progress made in the town of

Loon along the line of lace making and basketry promises soon to upset all the cheap pessimism about "what comes out of Loon." The baskets already finished are of a grade that will compare with the best, both in workmanship and originality of design. Along the line of gardening, success is also being met. Radish, pechay, okra, and squash, as well as a fine crop of corn, have been raised by the students.

In the town of Antequera especially good results were obtained in lace making. Linen and cotton lace, Irish crochet, and macramé hand-bags of good quality have been turned out.

At Duero considerable interest is being shown in the corn contests, and the municipal officials have offered prizes for the best results. Efforts are also being made to protect the crop from locusts and other pests, and to this work the president of the town will give assistance by a lecture setting forth the best methods of contending with this scourge.

It is gratifying to learn what has been accomplished toward improving the school grounds at Jagna. The supervising teacher for that town writes that through the coöperation of teachers and pupils, a very pretty lawn intersected by coral and shell walks and surrounded by a stone fence has been made. "The pupils and teachers desire," he says, "to make the school the social, literary, and athletic center of the town, and it seems that their efforts will be crowned with success."

From the industrial inspector at Tagbilaran comes a new and ingenious method of dyeing baskets. He states, in part:

"It has been found that nito is not the only industrial material that mud will work on, but that buri straw, buri raffia and ticug can be dyed in the following manner:

"*Process 1.*—Boil the material in water with the barks of the talisay and banti trees cut into small pieces.

"*Process 2.*—After boiling fifteen minutes, take the material from the water and bury in the mud for two days.

"*Process 3.*—If it is not well blackened repeat the above process.

"*Process 4.*—Wash the material in clear running water and dry in the sun from 7 to 9 o'clock in the morning and from 4 to 6 o'clock in the afternoon.

"*Process 5.*—Polish the material by rubbing it with common cloth.

"The color obtained by following out the above processes should be a jet black."

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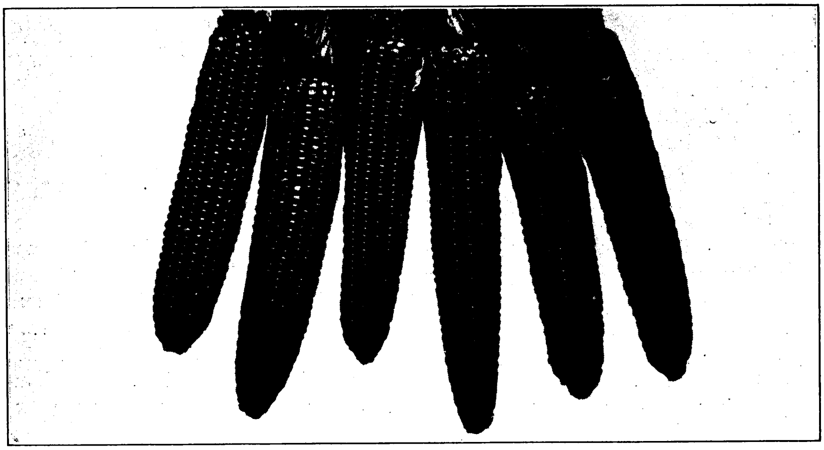
Industrial Supervisor J. C. Cudoba, of Camarines, has presented the following notes:

The corn campaign in Camarines has been carried on under exceptional difficulties. Last year it was all sun and no rain; this year it is all rain and no sun. And corn will not grow during wet weather. One thousand kilos of seed corn were received from the Bureau of Agriculture. However, this was so badly damaged by weevils that only prompt work saved any of it for planting. Nevertheless, many energetic teachers took up this work with enthusiasm and have been rewarded by good crops, considering the many adverse conditions that had to be met. It might be remarked that the sequence of seasons—rainy and dry—are such that even when conditions are normal, one cannot hope for a harvest of corn to make a showing at the Carnival in February. The best time for planting corn in Camarines is directly after the heavy rains have ceased—some time between November and January.

During the first two weeks of November the schools of Calabanga harvested 1,150 ears of corn in the two corn contests, and the end is not yet in sight. Calabanga district will have a demonstration December 20 and 21. A corn queen and her court will preside over the various contests—corn, industrial, athletic, and declamation—and bestow suitable prizes.

Nueva Caceres had a corn day and demonstration November 23. The presidents of all the municipalities of the province attended. At the industrial exhibit, the Central School sold over ₱300 worth of industrial articles, mostly Irish crochet.



Corn raised in Camarines.

A second corn campaign will be inaugurated as soon as the heavy rains cease. Over one thousand ears of seed corn have been secured for distribution by the industrial supervisor and a much better crop is looked for.

The pottery school of Libmanan has finally begun turning out work. In spite of several delays encountered in installing this plant, many pots have been molded and interest and enthusiasm have not been lacking. Unfortunately, however, it will require several months before the pots already molded can be fired and it is feared that no exhibit can be sent to the Carnival this year.

A word of warning regarding the conservation of basket materials may not be out of place. The supply of this material in the Islands is not unlimited; unless due care is taken the same unfortunate results may obtain here as are to be seen in the destruction of the supposedly inexhaustible forests of America. The school children in Camarines have raided all near-by localities and denuded them of basket material, and now only remote corners of the province can supply the stock. Moderation and judgment would have avoided this. Had the pupils left a leaf or two to each plant, future growth would have assured abundant material.

Students in Camarines during the past year have evidenced a great deal of interest, among other things in the fabrication of slippers. Not only have hemp slippers been fashioned according to former models, but initiative has been shown in the development of new designs and models as well. Over a dozen varieties of hemp slippers have been developed, and several hundred will be sent to the Carnival in February.

One of the features of the inauguration of the new building of the Philippine Normal School was a display of the industrial products of that institution. The finished products were in glass front cases, and were grouped according to the materials from which they were manufactured. The unfinished work was left in its proper place in the room, so that the regular working appearance of the room might not be disturbed.

The loom-weaving room contained four cloth looms and three matting looms. In the first loom a warp was being set up, ready for weaving; in the second, a piece of cotton cloth for beginners; in the third, an all-abaca cloth with designs; in the fourth, an all-silk roll of handkerchief silk. Various kinds of cloth made on these hand looms were displayed in rolls in the front part of the room. The matting looms were filled with mats in process of weaving. One contained a ticug; another, a balangot; and still another, a lupis-abaca mat.

A booth at the Nueva Caceres demonstration.

In the hat room were sabutan, bamboo, buri, and buntal hats of various sizes, shapes, and weaves. Some of these, when finished, will be of the very best quality produced. One of the finest of the hats is what is locally known as a Baliuag-Lukban hat. It is rather rare and has been woven here for only two or three years. It is made of buntal fiber, from Lukban, and woven after the manner of the bamboo hats of Baliuag.

The Irish crochet exhibit contained a large number of laces and insertions, very creditably executed, whole-piece designs for underwear and yokes, hatbands, opera and shopping bags, jabots, collars, etc. This made one of the prettiest displays on exhibit.

The embroidery room, which is situated on the top floor of the Taft wing, is splendidly lighted and well adapted for this work. Here were exhibited two bureau scarfs and a thirty-eight-piece table set on heavy linen, besides embroidered shirt waists, tea sets, center pieces, handkerchiefs, hand-bags, card cases, collars, etc. A very pretty center piece with a daisy-design was one of the most elaborately worked and finely executed pieces on exhibit. Some of the best pieces of embroidery were left in the frames, only partially finished. In fact, the embroidery seen in the cases represented but a very small per cent of the year's work.

A large collection of linen laces of more than fifty different designs were displayed on the pillows. Laces, insertions, bags, motifs, and whole-piece designs from the simplest to the most difficult, could be seen, both in the cases and hung about the room.

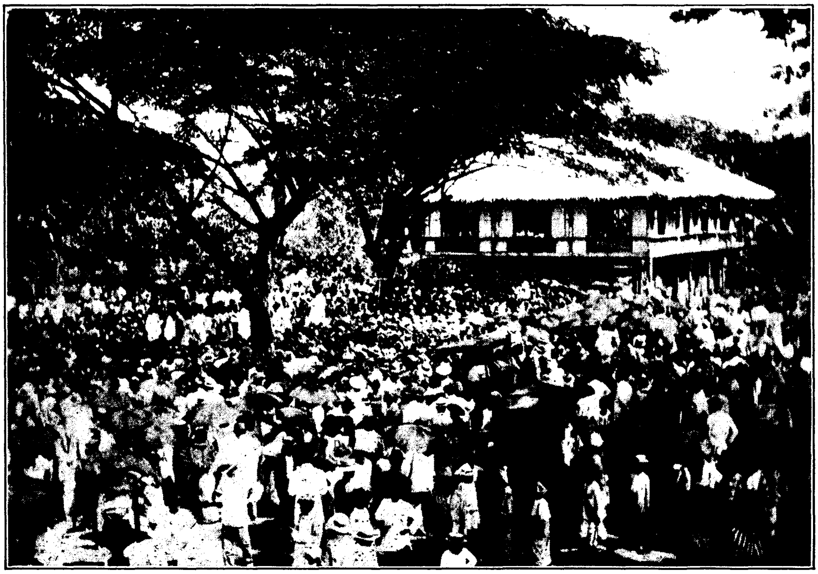
The basketry room had the largest collection of objects. Baskets of bamboo, rattan, banban, tipon-tipon, nito, buntal, abaca, and lupis, both finished and unfinished, were displayed in large numbers. A unique basket for collars, cuffs, and thimbles was made of buntal.

In the same room was a leather-sole slipper with abaca top, with which visitors were especially pleased. This is the first year that this kind of slipper has been turned out. The elementary hand-weaving exercises and designed mats were displayed upon tables in the rear of the room.

THE CORN CAMPAIGN.

A successful demonstration was held at Camiling, Tarlac, November 22, 1912. The demonstration was given in booths erected on the plaza. The festivities began at 9.30 in the morning and lasted until midnight.

Corn foods and other features pertaining to the growth and use of corn were shown in the decorated booths, which were surrounded by a crowd throughout the day. Eight booths were erected and used for cooking and serving corn coffee, hoe-cake, johnny-cake, corn mush, hot cakes, and corn fritters. In one of the booths the use of a small hand mill for preparing corn meal was demonstrated; this feature was a center of attraction. It is estimated that 8,000 people attended and remained during the day to sample the corn foods, witness the demonstration of the hand corn mill, and listen to the music furnished by the Camiling band.



Crowds at the Camiling corn demonstration.

In the evening an entertainment and dance were held in the school building. Addresses were made by the provincial governor, the division superintendent of schools, and the municipal president.

A neat little folder, containing general information pertaining to the production of corn and a collection of corn recipes, has been printed in Ilocano and is being used in the division of La Union in connection with the many corn demonstrations now being held as a part of the campaign. The issuing of the recipes in the form of folders is an excellent idea, as it enables the people to keep the recipes for ready reference and use at home.

Division Circular No. 26, s. 1912, "Instructions on Corn Growing," issued by the division of Isabela, is a very instructive circular and outlines in considerable detail many essential points to be observed in the production of good corn. It is one of the many instructive corn circulars issued by the various divisions.

The first of the series of corn demonstrations which has been planned for the Province of Oriental Negros was held in Dumaguete, November 25, 1912. Other demonstrations are to be held in all municipalities and larger barrios of the province.

Probably one of the most instructive circulars issued in connection with the corn campaign is division Circular No. 28, s. 1912, "Corn Demonstrations," from Agusan. Information is given as to what should be shown at corn demonstrations. All features are taken up and discussed in a manner planned to furnish details to teachers who shall have charge of corn demonstrations. The Province of Agusan has been liberal in furnishing funds for the conduct of the corn campaign.

Division Circular No. 112, s. 1912, "Agricultural Exhibit for the Division of Capiz," outlines a very commendable plan for securing the agricultural products to be sent to the Industrial Exhibition to be held in Manila, February 1 to 9, 1913, during the Manila Carnival. Capiz had a very creditable display of garden products at the last exhibition, and judging from the enterprise which is being shown it is planned to send a larger exhibit to the coming exhibition.

As the result of the present corn campaign, the people of Capiz Province have become very much interested in agricultural education. They are planning to secure a site for a farm school near the provincial capital. In this project the Philippine Railway Company has expressed its desire to coöperate with the Bureau of Education.

The following excerpt is taken from an article in the November number of the Agricultural Review, Bureau of Agriculture, on corn demonstration in the Philippines:

"The Bureau of Education is carrying on a constant and consistent campaign for the betterment of the food supply of the Philippines. Its object is twofold: the improvement of quality and variety, and the increase in quantity. The severe drought of the past year attended by a great shortage in the rice crop showed clearly the danger to the people of depending too much on one sole crop, and especially a crop so sensitive to weather conditions as rice.

"Commencing in June of this year the Bureau began an energetic and practical effort to interest the people in maize and to prove to them that maize as an article of diet was more nutritious than rice and as a plant was hardier and more easily raised. It was not the desire to supplant rice but to supplement it as a food and to utilize in corn culture, land which now lies waste or untilled. It is hoped to convince the public that maize is a most desirable food from the standpoints of economy, nutritive qualities and hardiness under adverse weather conditions."

This is one of many excellent comments that have appeared from time to time in publications in the Philippines and shows the coöperation and interest which is being taken in the corn campaign of this Bureau.

A large corn demonstration was held at San Fernando, Union, on Saturday, November 23, 1912. This was the first of the many demonstrations which are planned for the division.

The day began with a civic parade in the early morning. Several instructive and amusing features were shown. Considerable interest was attached to the persons who marched in the parade as "corn fed" and "rice fed."

The demonstration was conducted in eleven booths which were tastefully and suitably decorated. In certain booths were shown the points to be observed in the production of good corn. In others, girls were engaged in preparing and serving hominy, corn-meal mush, fried mush, and corn bread. It is estimated that fully 8,000 people attended the demonstration. A feature of the demonstration was the small pamphlet of corn recipes in the local dialect thousands of which were distributed from the booths.—N. H. F.

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The new Sales Agency building, located near the Manila Hotel on the new Luneta fill, was informally opened on October 15, 1912, when a sale of industrial articles was held. The building was not entirely finished, but in order to comply with the many requests asking that a sale take place at this time, when the question of presents for Christmas is a matter of some importance, Mr. G. A. O'Reilly, the Sales Agent, decided to have the opening on the date named.

The display consisted entirely of Philippine products, including such articles as baskets, samples of Moro work, articles woven by the Mountain tribes, laces and insertions, Irish crochet, and embroidery work. Although the number of articles on sale was limited, yet the selection was excellent, and that it met with popular approval is evidenced by the rapid manner in which the articles were sold.

Among the special features were the displays of lace and Irish crochet. The lace was the product of the schools conducted by the Belgian Sisters, while the Irish crochet was produced in the schools of Albay. The high standard of the work in these lines elicited considerable favorable comment and augured well for the future of these industries. The embroidery display consisted mostly of handkerchiefs and shirt waists. The articles were in keeping with the high class of work for which the Filipino women are noted and proved conclusively their right to dispute with other countries the supremacy of the market in this line of work.

It is no exaggeration to say that the opening was a success and demonstrated the fact that the Sales Agency will, as soon as its contemplated plans are operative, prove a valuable aid in developing the resources of the Philippines.

BUREAU OF EDUCATION PUBLICATIONS.

(Abbreviated list.)

ANNUAL REPORTS:

Ninth Annual Report of the Director of Education, 1909.
Tenth Annual Report of the Director of Education, 1910. (Supply limited.)
Eleventh Annual Report of the Director of Education, 1911.
Twelfth Annual Report of the Director of Education, 1912.

BULLETINS:

5. Notes on the Treatment of Smallpox.
10. Government in the United States. Prepared for use in the Philippine Public Schools.
24. Outline of Year's Course in Botany and Key to the Families of Vascular Plants in the Philippine Islands.
29. Constructive Lessons in English, Designed for Use in Intermediate Grades.
31. School and Home Gardening.
32. Courses in Mechanical and Free-hand Drawing, for Use in Trade and Intermediate Schools.
33. Philippine Hats. (Supply limited.)
34. Lace Making and Embroidery.
35. Housekeeping and Household Arts—A Manual for Work with the Girls in the Elementary Schools of the Philippine Islands.
36. Catalogue and Announcement of the Philippine Normal School. (Edition exhausted.)
37. School Buildings and Grounds.
38. School Buildings—Plans, Specifications and Bills of Materials.
39. A Manual of Free-hand Drawing for Philippine Primary Schools. (In course of preparation.)
40. Athletic Handbook for the Philippine Public Schools.
41. Service Manual of the Bureau of Education.
42. Intermediate English II—Notes, Directions, and Aids to the Preparation of the Correspondence Study Course.
43. Catalogue of the Philippine School of Arts and Trades, 1911–12.
44. Libraries for Philippine Public Schools.
45. The School of Household Industries.
46. The Industrial Museum, Library and Exhibits of the Bureau of Education. (In course of preparation.)
47. Good Manners and Right Conduct for Primary Grades. (In course of preparation.)

CIVICO-EDUCATIONAL LECTURES:

1. The Rights and Duties of Citizens of the Philippines. (Supply limited.)
2. The Prevention of Diseases. (Supply limited.)
3. Rice. (Supply limited.)
4. Diseases of Animals. (Supply limited.)
5. Coconut Beetles. (Supply limited.)
6. The Housing of the Public Schools. (Supply limited.)
7. Coconuts.
8. Corn.

THE TEACHERS' ASSEMBLY HERALD:

Volumes I, II and III. (Supply exhausted.)
Volume IV, 1911. (Supply limited.)
Volume V, 1912. (Supply limited.)

TEXTBOOKS:

Selected Short Poems by Representative American Authors.
Commercial Geography; the Materials of Commerce for the Philippines.
Macaulay's Samuel Johnson; Emerson's Self Reliance; Lincoln's Gettysburg Address.
An Introduction to the Study of Colonial History.
Economic Conditions in the Philippines. (In course of preparation.)
Supplementary Miscellaneous Problems for Trade Schools and Trade Classes. (In course of preparation.)

THE PHILIPPINE CRAFTSMAN:

Volume I. (Now current.)

CRAFTSMAN REPRINTS:

1. Philippine Mats. (In course of preparation.)

MISCELLANEOUS:

Woodworking, a Manual of Elementary Carpentry for Philippine Public Schools.
Some Recipes for Preparing Jellies, Preserves, Pickles, and Candies from Philippine Fruits. (Supply exhausted.)
Syllabus of Economic Conditions in the Philippines. (Supply exhausted.)
A Statement of Organization, Aims, and Conditions of Service in the Bureau of Education.
A Talk on Health Conditions in the Philippines.

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